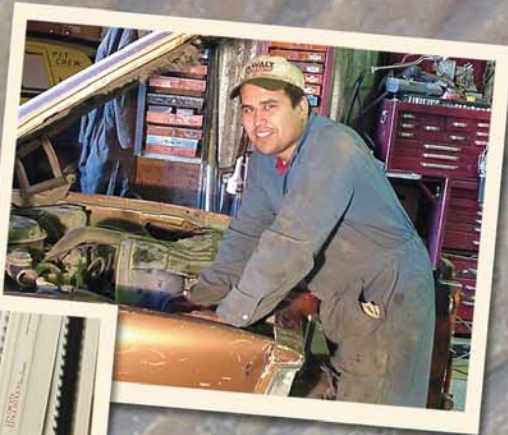


Workplace Safety

Safety and the Young Worker

STUDENT'S MANUAL



WORKERS' COMPENSATION BOARD
Northwest Territories and Nunavut

Acknowledgements

Acknowledgements

The Workers' Compensation Board wishes to acknowledge a number of organizations.

Those who contributed to the original Safety and the Young Worker Program documents:

- Workers' Compensation Board, British Columbia
- Manitoba Labour Education Centre

Those who contributed to this revision to the Workplace Safety: Safety and the Young Worker Program documents:

- Manitoba Federation of Labour
- Ontario Service Safety Alliance
- Workers' Compensation Board, British Columbia
- Bow Valley College
- DK Consulting

The information contained in this reference material is distributed as a guide only. To the best of our knowledge, it is generally current, having been compiled from sources believed to be reliable and to represent the best current opinion on the subject. No warranty, guarantee or representation is made as to the absolute correctness or sufficiency of any representation contained in this reference material.



Photo Information

Chapter Headers:

Lesson	Name and Occupation
1	James Laroque Jr., 2nd year Apprentice Diamond Polisher/Cutter, Arslanian Cutting Works (NWT) Ltd.
2	Cindy Lane, 3rd year Apprentice Plumber, Yellowknife
3	Kelly Donovan, Journeyperson Automotive Service Technician, T.H. Mechanical, Inuvik
8	Cory Dodd, Journeyperson Aircraft Maintenance Engineer, Buffalo Air
9	Kevin Weitzel, Journeyperson Painter and Decorator, 1st year Apprentice Carpenter
10	Melanie Ridgely, Journeyperson Cabinetmaker
11	Ryan Schimmelman, 2nd year Apprentice Electrician, BHP
12	Josh Bourque, 3rd year Apprentice Welder, JSL Mechanical
13	Paula Savoie, Food and Beverage Server, The Office, Yellowknife
14	Celine Pelletier, Nurse, Stanton Regional Hospital
15	Janine Ruptash Stauffer, Skills Canada Participant, Cooking Competition
16	Clayton Smith, 4th year Apprentice Heavy Duty Equipment Mechanic, BHP
17	Tina Nasholm, Diamond Polisher/Cutter (Bruter), Sirius Diamonds
18	Chris Martin, 2nd year Apprentice Millwright, BHP
19	Sophie Tremblay, Apprentice Diamond Polisher, Sirius Diamonds

Photos in Text:

Lesson	Name and Occupation
2	Chris Martin, 2nd year Apprentice Millwright, BHP
10	Eric Amarouk Hughson, Skills Canada Competition, 3rd year Apprentice Electrician, Baker Lake
10	Tina Nasholm, Diamond Polisher/Cutter (bruter), Sirius Diamonds
10	Vince Halushka, Diamond Polisher (brillianteer), Sirius Diamonds
11	Melanie Ridgely, Journeyperson Cabinetmaker
13	Karine Massé, Journalist, L'Aquilon
14	Joanne Erasmus, Counsellor, Aurora College Corporal Charlotte Joa, RCMP, G Division
15	Colleen Napier, 3rd year Apprentice Cook, Ekati Services (Photo by Teresa Gray)
19	Lincoln Edward, Journeyperson Heavy Duty Equipment Mechanic, Finning

Cover Photos:

Clayton Smith, 3rd year Apprentice Heavy Duty Equipment Mechanic, BHP
Cindy Lane, 3rd year Apprentice Plumber, Yellowknife
Kelly Donovan, Journeyperson Automotive Service Technician, T.H. Mechanical, Inuvik
Josh Bourque, 3rd year Apprentice Welder, JSL Mechanical
Karine Massé, Journalist, L'Aquilon

Table of Contents

An Introduction to Workplace Safety: Safety and the Young Worker	
Lesson 1	1
Laws in the NWT and Nunavut	
Lesson 2	5
Health and Safety Hazards	
Lesson 3	9
WHMIS: An Introduction	
Lesson 4	12
WHMIS: Responsibilities and Labels	
Lesson 5	15
WHMIS: Product Classification and Hazard Symbols	
Lesson 6	19
WHMIS: MSDS and Control of Hazardous Materials	
Lesson 7	32
Handling, Carrying and Lifting	
Lesson 8	39
Noise	
Lesson 9	42
Mechanical Equipment, Tools and Safety	
Lesson 10	45
Electrical Safety	
Lesson 11	52
Fire Safety	
Lesson 12	55



Office Safety	
Lesson 13	60
Ergonomics	
Lesson 14	65
Kitchen Safety and Hand Injuries	
Lesson 15	69
Environment	
Lesson 16	74
Hazard Recognition and Confined Spaces	
Lesson 17	80
Injury on the Job	
Lesson 18	88
Labour Standards and Fair Practices	
Lesson 19	94
WCB Workplace Safety Passports	98
The Week Time Stood Still	
Appendix 1	A-1
Glossary	
Appendix 2	B-1

An Introduction to Workplace Safety: Safety and the Young Worker – Lesson 1

The “Workplace Safety: Safety and the Young Worker” program is designed to help prepare you for your first work experience or first full or part-time job. The aim of this program is to increase your knowledge of safety and health issues in the workplace.

Why is there a Workplace Safety Program?

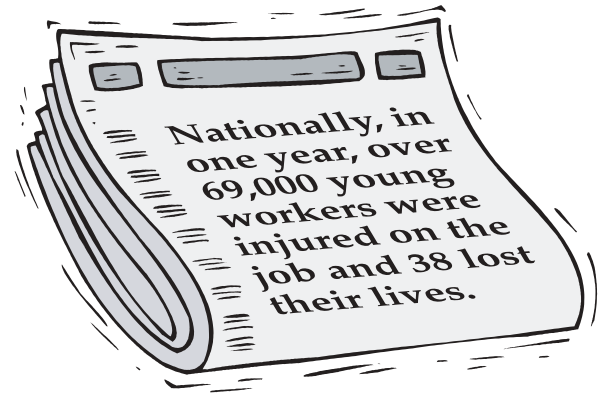
Throughout Canada, a young worker is defined as **anyone under the age of 25**. All across Canada, safety programs are being developed for young workers. There is a need for these programs because of the number of serious accidents involving **young workers**. Some young workers have been injured or killed during their first few days at a new job.

This program is for anyone who is working permanently, part-time, or is looking for work.

There are many things that have to be learned so you can work safely at any job. The Workplace Safety Program develops skills in recognizing and avoiding hazards.

There is a lot to learn when you are going to start a job. Safety is something that is learned as part of any job. It may seem like common sense but some of it will be new. All of it is important.

In a work experience program, an employer may be assigned, or you may be asked to find an employer who is prepared to provide you with work experience



and training. The employer is expected to teach you how to do useful tasks in the workplace and give you valuable experience. You will not be allowed to stay with one employer for more than 125 hours and will not be paid for your work.

Before you begin, a **work permit** from Labour Services must be obtained by your teacher, allowing you to work without pay. The permit may specify safety conditions that must be met if you are to participate in the work. Ask your instructor for a copy of the permit.

Main Objectives

Underline/highlight the answers to these questions as you read.

- What is the definition of:
 - young worker
 - safety
- What is another word for a danger or a risk?
- What is the leading cause of workplace deaths for young workers?
- Why are many accidents and incidents not reported?



Safety is something that is learned as part of any job.



Quick Quiz #1

True or False

1. Before you begin work in a work experience program, you require a work permit from the Department of Education.
2. A young worker is anyone under the age of 25.
3. It is the government's responsibility to make sure that workers are trained.
4. It is your responsibility to follow safety procedures.
5. Injuries from machines and electrocutions account for the leading cause of death among young workers (next to car accidents).

Answers:

1C 1F 3E 4T 5T

*"A student geologist was employed by a mining company in the Northwest Territories. A helicopter dropped him and another employee at their work area around 30 kilometres from their camp. They had no means of communicating with the camp. A grizzly bear chased the student into a nearby body of water. After treading water for a period of time the student succumbed to **hypothermia** and drowned. The companion had to wait several hours until the helicopter returned before he could get help."*

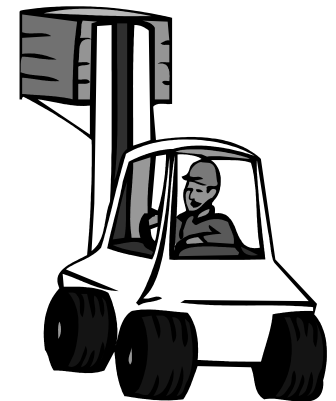
In Canada, it has been shown that the leading cause of young worker deaths (next to car accidents) has been from **electrocutions** and injuries involving machines. Many of these deaths could have been avoided if the employer had given the young worker training on how to work safely. Employers need to teach the young worker where the risks are and how to avoid them. If a few of the basic safety rules had been in place, these deaths could have been avoided. It is the **employer's responsibility** to train his or her workers and it is **your responsibility** as a worker to follow safety procedures.

Safety can be simply described as the performance of activities without accident, injury or illness. An important part of choosing to perform a task safely involves your attitude. If you can develop a **healthy attitude about safety** in your job, you will continue to come home each night.

The best employers are very serious about safe workplaces. They provide safety training for their new workers and have an ongoing safety program to deal with safety issues. It is the employer's responsibility to train new people to recognize a danger or a risk. A danger is a **hazard**; a risk is the degree of exposure to the hazard.

As a new worker, you might not feel comfortable asking your boss a lot of questions. If you do not ask questions and your employer does not train you to work safely, you will not be aware of the risks and will be more likely to have an accident. So if you do not know or understand – ASK! It is important to do so.

"A summer student was killed during his first week of work at a warehouse. He was helping to move 20-foot long pipes with a fork-lift truck. The pipes were not safely set in place and the whole load became unbalanced and fell on the student. He was crushed to death."

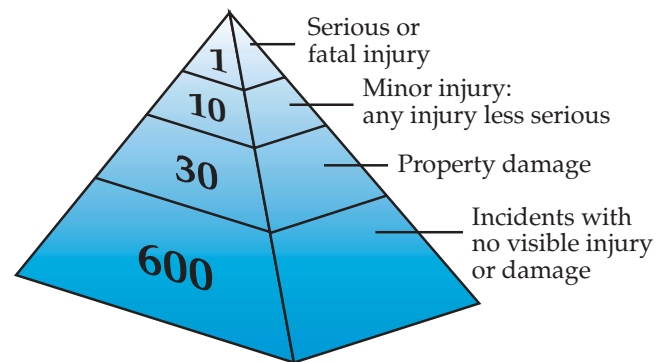


Leading Causes of Workplace Injury

There is a strong concern all across Canada for the safety of young workers. Research has shown that many students are not aware of the possible dangers that can be found in the workplace. Lack of awareness has resulted in young people, like yourself, being seriously injured or killed on the job.

The following chart shows the number of injuries to young workers over a recent three-year period for different age groups of young workers in the Northwest Territories and Nunavut.

Study the chart and do your best to answer the questions in Quick Quiz #2.



All Injuries to Young Workers for a Three-Year Period, Northwest Territories and Nunavut

Age	Year 1	Year 2	Year 3	Total	Average
15	12	6	8	26	8.7
16	11	25	18	54	18
17	12	27	18	57	19
18	36	48	39	123	41
19	50	78	51	179	59.7
20	60	69	63	192	64
21	77	76	79	232	77.3
22	88	101	70	259	86.3
23	108	90	84	282	94
24	120	86	100	306	102
Total	574	606	530	1,710	570

Time Loss

Time loss is the type of injury where the worker has been injured seriously enough that he/she must have time away from work while recovering from the injury. The chart on the following page is a sample of some of the more common injuries reported to WCB in a typical year.

Quick Quiz #2



- How many 18 year olds were injured in Year 1?
a) 17 b) 48 c) 36 d) 39
- What was the average number of injuries for 18 year olds over the three-year period?
a) 36 b) 48 c) 39 d) 41
- What is the main reason why 15 to 17 years olds seem to have less workplace injuries?
a) This age group is known to be very safety conscious.
b) There are fewer workers in this age group in the workforce.
c) Older workers tend to forget about possible work site dangers.
- On average, more 15 and 16 year olds have injuries than 18 and 19 year olds.
 True False

Answers:

1C 2D 3B 4F



Safety is something that is learned as part of any job.

For more INFO on this lessons topic



Refer to the video
Safety and the Young Worker,
available from:

Workers' Compensation
Board
Resource Centre Library
P.O. Box 8888, Yellowknife
NT X1A 2R3
Or phone toll free
1-800-661-0792
Or fax requests to
1-867-873-0262

In recent years, across Canada, there were well over 60,000 serious **time loss** injuries per year involving young workers. Statistics from all provincial and territorial accident records show that as many as **one in seven young workers are injured while on the job**. Therefore, if there are 21 students in your class, and all had jobs, three of you would be injured on the job each year.

It should be noted that these statistics come from injuries and incidents that involve time loss and are reported. Many accidents and incidents are not reported because supervisors, employers and young workers are **unaware of proper reporting procedures**. Often, if time is not lost, the accident is ignored.

It is estimated that for every serious injury or fatality, there are 600 incidents.

It is important to follow the safety rules at every work site. Even more important is to ask questions when you do not know something. Asking your supervisor how to do something safely is part of your job. It could save your life. It's the smart thing to do.

Some jobs have more hazards than others. These types of jobs also have a greater risk for incidents.

Some high-risk activities include working around:

- moving parts,
- heavy equipment,
- mobile equipment, and
- construction sites.

Northwest Territories and Nunavut Time Loss Injuries by Type of Accident and Age.

Type of Accident	20-24 Years Count	15-19 Years Count	Total
Overexertion in lifting	26	5	31
Struck by falling object	7	4	11
Struck by slipping hand held object	7	3	10
Slip, trip, loss of balance without fall	6	2	8
Fall on same level	8	2	10
Rubbed or abraded by foreign matter in eye	8	1	9
Overexertion in pulling or pushing objects	5	2	7
Caught in running equipment or machinery	3	2	5

Laws in the NWT and Nunavut

– Lesson 2

During this course you will view videos which have been made in other provinces of Canada. These videos make reference to laws that govern employers and employees in the provinces where they were made. Each province and territory has its own laws for Health and Safety, these are provincial or territorial laws. The NWT and Nunavut have laws which are similar to ones that are covered in the videos.

The **Workplace Hazardous Materials Information System (WHMIS)** law is a Canada-wide law, so it is the same all across Canada. The **WHMIS** law deals with the handling of hazardous materials and guarantees three basic rights to workers to protect their health and safety when exposed to hazardous materials.

The right to refuse work if the worker believes it to be dangerous to health and safety.

The right to participate in decisions affecting workplace safety conditions when dealing with hazardous materials.

The right to know about possible hazardous materials in the workplace.



The laws looked at in this section will include the NWT and Nunavut *Safety Acts* and the NWT and Nunavut *Mine Health and Safety Acts*.

Generally, the safety of all workers in the NWT and Nunavut is covered by these two NWT and Nunavut Acts. The only workers not covered include:

- federal government employees such as Parks Canada or Department of Fisheries and Oceans staff,
- federal workers in federal crown corporations such as the CBC,
- workers in federally regulated industries such as airlines, banks, broadcasting,
- trucking companies that have **interprovincial** routes such as the major moving companies, and
- **domestic** workers such as nannies.

If you find employment or work experience with one of the above organizations ask your employer or union representative to find out which laws regulate your work-place and where you could get a copy of these laws.

Main Objectives

Underline/highlight the answers to these questions as you read.

- Name a federal law designed to protect you in the workplace.
- What three basic rights do you have as a worker concerning hazardous materials at your job site?
- What are the two NWT and Nunavut laws which will protect you as a worker?
- What can you do if you feel it is unsafe to work in your workplace?



Workers have the right to refuse work that is unsafe.



Quick Quiz #3

True or False

1. WHMIS stands for Workplace Health and Mining Information System.
2. WHMIS is a law.
3. WHMIS applies only within the NWT and Nunavut.
4. You do not have the right to refuse work in the workplace.

Multiple Choice

5. How many basic rights are you guaranteed under WHMIS regulations?
a) 2 b) 3 c) 4 d) 12

Answers:

1 F 2 T 3 F 4 F 5 B

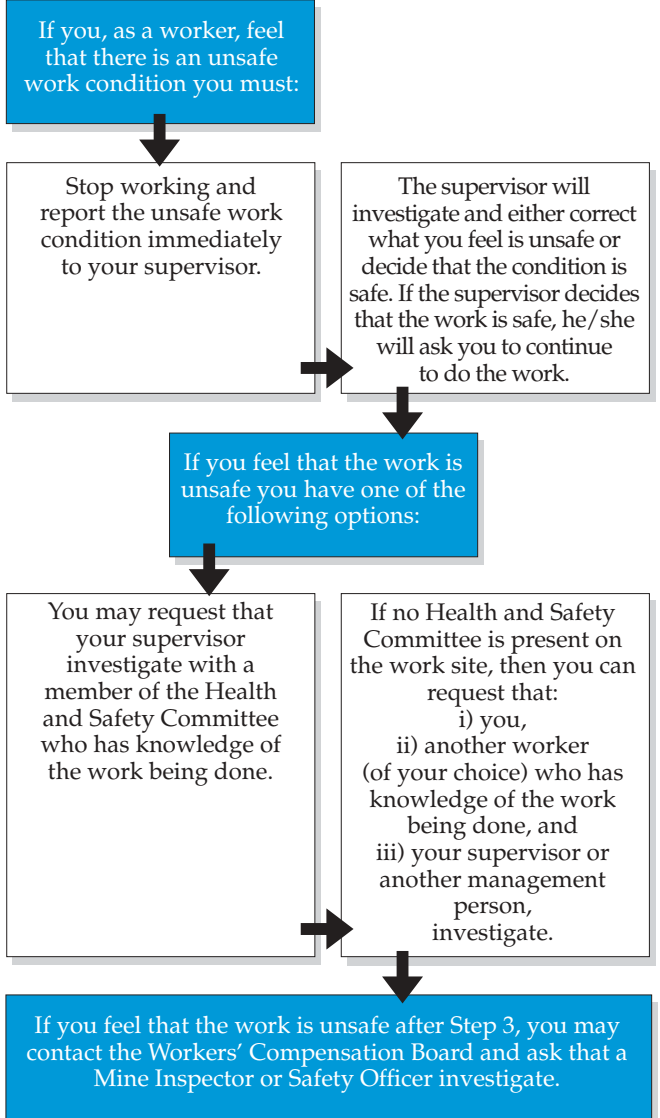
Some workers are covered by a law dealing with workplace safety called the Canada Labour Code. This law is part of the federal government laws. Workers who fall under the [Canada Labour Code](#) include employees who, as part of their job, conduct their work in more than one province. People who work for national airlines, banks, national trucking companies, and in broadcasting are governed by the [Canada Labour Code](#).

The NWT and Nunavut Safety Acts and the NWT and Nunavut Mine Health and Safety Acts

These Acts set the [standards](#) for the minimum protection of workers' health and safety throughout the NWT and Nunavut. It is up to the employer to ensure the conditions set out in the Acts are met. Both of these Acts give the worker **the right to refuse work that is unsafe**.

The *Safety Acts* and the *Mine Health and Safety Acts* also cover such areas as:

- duty of employer,
- duty of worker,
- accident prevention and general safety,
- joint work site Health and Safety Committees or Occupational Health and Safety committees,
- power and duties of Safety Officer and/or Mine Inspector, and
- offences of employer or worker, and the penalties imposed.



The Act also allows for government to make rules about how to work safely. These rules are called **regulations** and they cover such things as:

- personal protective clothing and equipment,
- safety programs and training,
- ventilation, lighting and temperature at workplaces,
- reporting of accidents,
- first aid service requirements,
- office safety,
- construction and maintenance,
- exposure limits to certain chemicals or products,
- mobile equipment,
- guarding of equipment, and
- investigation of dangerous occurrences or incidents.



The *Safety Acts* are in place for NWT and Nunavut employers to follow and enforce. If an employer is not following the **Act** or the **regulations** – Safety Officers or Mine Inspectors have the power to:

- inspect any workplace,
- investigate any potential unsafe situation and/or work refusal,
- investigate accidents or serious incidents,
- order the employer or the worker to comply with the law,
- shut down a work site, and
- start legal action.

The Labour Standards Act

Imagine you have just started your first part-time or full-time job. If you are like most people your age, you probably have a few questions such as:

1. How many hours will I get to work each week?
2. How much will I get paid? Is there a certain amount they have to pay me?
3. Can they just tell me one day that they no longer need me to work there? Do I have any job security?
4. Do I get vacations and annual holidays?

An Act says what people can or cannot do. The regulations “fill out” the details suggested by the Act and tell how, where, and when.





Quick Quiz #4

1. Whose responsibility is it to ensure that the standards of the NWT and Nunavut *Safety Act* and the NWT and Nunavut *Health and Safety Act* are met?
 - a) employer
 - b) worker
 - c) government
 - d) safety officer
2. Which of the following is not a basic right workers have to protect their health and safety?
 - a) the right to know about possible hazardous materials in the workplace
 - b) the right to decide hours of employment and minimum wage
 - c) the right to participate in decisions affecting workplace safety conditions
 - d) the right to refuse work if you believe it to be dangerous to health and safety

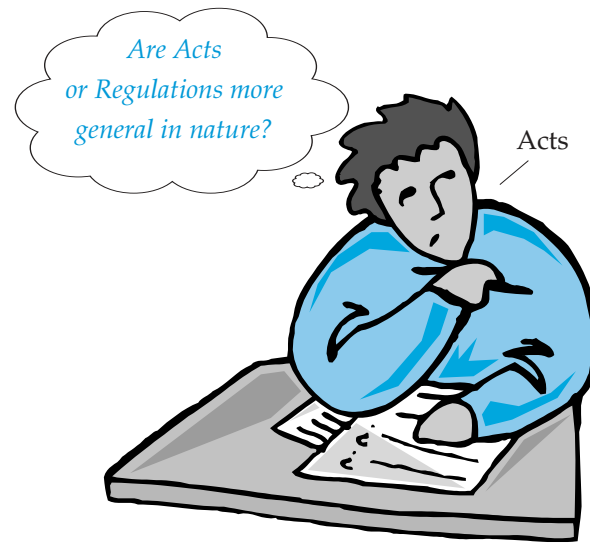
Answers:
1A 2B

Workers have the right to refuse work that is unsafe.

The *Labour Standards Act* and Regulations govern areas such as:

- hours of work,
- minimum wages,
- **termination** of employment, and
- vacations and general holidays.

Further study of this Act will be done in a separate unit later in this course. All too often young workers learn about safety on the job the hard way – after an **incident** or an injury at work. New employees may feel unsure or hesitant about asking an employer or employees about safety issues. **HOWEVER...**



- The law requires employers to protect health and safety at the workplace.
- The law sets out the minimum standard for that protection.
- Joint work site health and safety committees are one of the ways you can find answers to your questions about safety in the workplace.
- Workers and employers are required to cooperate with each other on matters concerning health and safety.

For more INFO on this lessons topic



Refer to the video *Safety and the Young Worker*. (If you have not already viewed it after lesson one, this would be a good time to view it.) It's available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Keep in mind that although this video is from British Columbia, the laws are similar to those in the NWT and Nunavut.

Health and Safety Hazards

– Lesson 3

The Four Main Types of Health and Safety Hazards

Safety on the work site involves identifying **hazards** and taking steps to correct or control them. This is the responsibility of both **you and your employer**. There are four main types of health and safety hazards: chemical hazards, physical hazards, biological hazards and ergonomic hazards.

Chemical Hazards

Every worker should be informed about hazardous chemicals on the work site. Your employer has the duty to educate you on how to work safely with these chemicals. The employer must also supply protective equipment to each worker.

By wearing your equipment you protect yourself.

Hazardous chemicals can enter the body in several ways:

Inhalation – substances are breathed in. If there is a risk of breathing in harmful vapours from chemicals, appropriate ventilation systems or respiratory equipment should be used.



Ingestion – chemicals are swallowed. Toxic substances will be transferred onto food and ingested unless your hands are washed. Hands must be washed with soap and running water before eating, drinking, or smoking. You may need to wear appropriate gloves, but you still will need to wash your hands.

Your hands may come in contact with some hazardous materials when you remove the gloves. How do you get both gloves off without touching at least one of them with your bare hand? Try it: put mittens or gloves on and then try to take them off without touching a glove with a bare hand.

Absorption – chemicals are absorbed through the skin. Once in the skin, they may enter the circulatory system and damage the body. They may also damage or irritate the skin itself, causing a condition known as dermatitis. Proper protective clothing and washing after removal of equipment helps prevent absorption of chemicals.

Injection – chemicals may enter by means of needle or exposure to a source of high pressure. The occurrence of this type of exposure in the workplace is rare, but can happen in a medical and/or laboratory setting. The use of **compressed** air hoses can also cause “**injection**” type exposure. Again, this is rare.

Further study of Chemical Hazards will be done in the WHMIS (Workplace Hazardous Materials Information System) Unit.

Main Objectives

Underline/highlight the answer to this question as you read.

- What are the four main types of safety and health hazards?



It is your responsibility as a worker to wear the protective equipment.



Quick Quiz #5

True or False

1. Taking steps to identify and correct or control safety hazards on the work site is the responsibility of both you and your employer.
2. Ingestion occurs when hazardous chemicals are breathed in.
3. Irritated skin is often a sign of a chemical hazard that has been absorbed.
4. A needle puncture is an example of a chemical hazard being injected.
5. Respiratory equipment can help prevent chemical hazards from being inhaled.

Answers:

T F T F T F T T

Physical Hazards

Following are examples of physical hazards on the job:

Machinery: Machinery includes heavy equipment such as tanker trucks and small equipment such as a meat slicer or paper cutter. Injuries caused by machinery can be immediate as in the loss of a finger; or develop over a period of time as in **repetitive strain injuries**.

Machinery with moving parts can catch or cut the body, clothing or jewellery. Devices must be in place to protect the worker from moving parts. The worker must also wear appropriate clothing and remove jewellery.

Electricity: Whenever a piece of machinery is being repaired or maintained it must be locked out. This means that the power is cut off at the source. This protects the worker from the machinery being accidentally turned on or the worker being contacted by electricity.

Vibration: Vibration is caused by the moving parts of machinery. It may be the whole body that vibrates in moving vehicles or it may be your hand and arm that vibrate when you hold power tools. An example of a hand-held power tool is a chainsaw.

Noise: Noise is defined as unwanted sound. High noise levels over a long period of time can damage the cilia in your ear causing hearing loss. This loss can be permanent or temporary. Loud noises on the work site can interfere with communication between you and other workers and cause an incident. In the workplace, where noise is a hazard, safety precautions may include noise barriers and personal hearing protection.

Temperature: Heat and cold may be part of the workplace. Heat may be encountered as a result of working close to machinery that gives off heat (ovens, deep fryers or furnaces) or by working outside in the summer. Training, proper clothing and special heat shields help in heat situations. If you work outside in our northern climate or in refrigerated areas, cold conditions are a hazard. Again, proper training and clothing allow you to work safely.

Biological Hazards

Biological agents are living substances that can cause illness or disease. Biological agents in a work site are a hazard. Examples of these include bacteria, fungi and viruses. Biological hazards are present in work sites involving food preparation; hospitals; situations where animals, plants, sanitation or sewage are present; or where the worker is involved in child care.

If you work where biological hazards are present you will require special procedures and training. Every worker who is exposed to biological hazards should know how to protect himself or herself. Biological hazards will be further covered in the WHMIS Unit.

Ergonomic Hazards

The design and organization of a work site affect your health and safety. If the workstation is not designed to suit the needs of a worker, his health and safety can become at risk. **Ergonomic means setting up the workplace to meet the needs of the worker.**

In a good ergonomic design of a workstation, tools, equipment, lighting, temperature, noise, and the movements of workers are considered. The poor design of a workstation results in ergonomic hazards.

Often, ergonomic hazards can be classified as physical hazards.

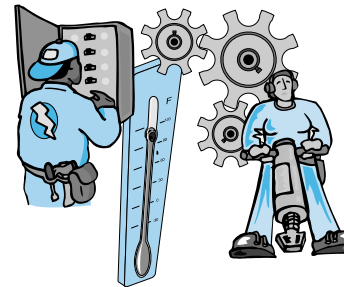
Ergonomic hazards include:

- shift work,
- lighting,
- temperature,
- humidity,
- noise, and
- activity requiring the use of the same muscles over and over again.

Injuries can develop in workers who:

- maintain fixed positions,
- perform repetitive movements of the limbs,
- overload muscle groups,
- use forceful motions, and
- work with great speed along with repetitions.

By requiring the work site to suit the worker and not the worker to suit the work site, many **ergonomic** hazards are removed.



For more **INFO** on this lesson's topic



Refer to the videos *It Didn't Have to Happen*, and *Silly Little Risks: Talking to Teens* (optional), available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Quick Quiz #6



1. Electricity, vibration and noise are examples of what type of hazard?
a) ergonomic
b) physical
c) biological
2. The poor design of a workstation results in what type of hazard?
a) chemical
b) biological
c) ergonomic
d) physical
3. Where are biological hazards often found?
a) assembly lines
b) food preparation areas
c) crowded workstations
4. Which statement best describes a lockout?
a) keeping cupboards and doors locked to prevent entry
b) when an employer prevents workers from gaining access to the work site
c) cutting all power to a piece of equipment at the source

Answers:

1B 2C 3B 4C

WHMIS: An Introduction

– Lesson 4

Main Objectives

Underline/highlight the answers to these questions as you read.

- What is WHMIS?
- Who does it apply to?
- Why is it needed?
- What problems does WHMIS try to solve?
- What are the three main parts of WHMIS?

WHMIS (pronounced “wimis”) stands for **Workplace Hazardous Materials Information System**. It is a Canada-wide information system set up to protect all Canadian workers and employers. A **hazardous material** is any substance that can cause illness, disease, injury or death to unprotected people. Sometimes **hazardous materials** are called **hazardous products**, **controlled products** or **dangerous goods**. **WHMIS legislation covers controlled products.**

WHMIS provides vital information about any materials that pose a risk or hazard at the workplace. You may have already been introduced to this system in your high school science classes.

WHMIS provides employers and workers with information about **hazardous materials** they work with on the job. This information is necessary to protect your health and safety. WHMIS became law in the NWT and Nunavut on November 1, 1989. It requires suppliers, employers and workers to use the system to identify and handle **hazardous materials** safely. WHMIS rules apply in every province and territory of Canada. The information system is based on a law in Canada that states *everybody has a right to know*.

People who do not follow the laws on **hazardous materials** can be charged with an offence and if convicted, could be fined or jailed.

Who Developed WHMIS?

Once the need for a national information system was recognized, WHMIS was developed by joint committees of employers, unions and governments.

“On his third day of a part time job, a 19 year old was pouring a drum of highly flammable chemical into small containers. Highly flammable means that the chemical can start a serious fire if not handled properly. There were no warning labels on the drums that held the chemical. A spark from static electricity made the chemical explode. This young worker suffered burns to 95% of his body. He died the next day.”

Why is it Needed?

Before we are permitted to drive a vehicle, we obtain driver training and have to take a driving test to make sure we are capable of handling a car and the types of situations we might find ourselves in, such as traffic. The same should occur when we start to work in our first part-time or full-time jobs. In our new job we need to be made aware of any chemicals we might come in contact with, or situations we might find ourselves in.

The information system is based on a law in Canada that states everybody has a right to know.

In our daily lives there are hundreds of materials and chemicals which have been developed to make our work easier and allow us to make better products. In this process there are substances that are used or produced that can be dangerous to people if handled improperly. WHMIS serves to let us know:

- which materials are dangerous, and
- how we can protect ourselves when we handle them.

Hazardous materials can present a danger through explosion, fire, skin contact, inhalation or ingestion. How dangerous they are will usually depend on one or more of the following:

- how much pressure there is (gases),
- how easily the material burns or explodes,
- how much of the material there is,
- how toxic it is,
- how it enters the body, and/or
- how concentrated it is.

“Informed workers have fewer injuries from exposure to controlled products.”



What Problems Does WHMIS Try to Solve?

- Unlabelled chemicals at workplaces.
- Lack of awareness by employers about the identity and hazards of the chemicals they are using.
- Inadequate information provided by suppliers to employers and workers, on the hazards of the chemicals they are using.
- Differences between provinces and territories in the way hazardous materials are handled.

The Three Main Parts of WHMIS

WHMIS uses three main things to help you identify and handle hazardous materials safely:

1. Symbols/labels are applied to the container of the material and supply vital warning information.
2. Material Safety Data Sheets (MSDS) are sheets of information stored separately from the material. These sheets give details for handling emergencies, clean-ups, or controls for the safe use of the **hazardous materials**. NWT and Nunavut law requires the employer to have a MSDS available for every **controlled product** in the workplace.
3. Worker Education: Employers must provide instruction to each worker on how to use WHMIS, what **hazardous materials** are on site, and how to handle them properly.



Quick Quiz #7

True or False

1. In the near future, WHMIS will apply to all provinces and territories.
2. WHMIS is based on the premise that everyone has the right to know.
3. WHMIS was developed by the federal government and passed on to provinces and territories to implement.
4. One of the problems WHMIS solves is that many provinces and territories treated hazardous materials differently.
5. Hazardous materials can present a danger through explosion, fire, skin contact, inhalation or ingestion.

Answers:

1F 2T 3F 4T 5T



The information system is based on a law in Canada that states everybody has a right to know.



Quick Quiz #8

- MSDS stands for:
 - Mining Safety Data Sheets
 - Material Safety Data Sheets
 - Material Safety Diagnostic Sheets
- As a worker, you have the responsibility to:
 - recognize labels
 - check for hazards
 - follow recommended procedures
 - all of the above
- Which is not one of the three main parts of WHMIS?
 - symbols or labels on all containers
 - MSDS
 - worker education
 - identifying exempted products

Answers:
1 3 E D 2 B 1

Employee Responsibility

You, as a worker, have the responsibility to use the system to protect yourself from **hazardous materials** by:

- recognizing symbols/labels,
- checking the hazards, and
- following recommended procedures.

Exemptions of Products from WHMIS

Some products are already covered by other legislation. These have been partially exempted from having to follow WHMIS requirements for labels and MSDS's. Employers must still follow WHMIS laws for these products by educating workers in the safe handling of these products and using workplace

labeling when contents are transferred. These products include consumer products, cosmetics and drugs, explosives, pesticides and radioactive substances.

Some products are covered by other laws and are completely exempted from WHMIS. These include wood and products of wood, tobacco and products made of tobacco, hazardous wastes and manufactured articles.

For more INFO on this lessons topic



Refer to the video *It's a Hazardous World*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262



Quick Quiz continued

- The danger of a hazard depends on which of the following factors?
 - the amount of material or concentration of material
 - the month of the year or time of day
 - the manufacturer
 - your elevation (above sea level)

Answers:
1 3 7

WHMIS: Responsibilities and Labels

– Lesson 5

WHMIS: Responsibilities and Labels

The responsibility for safely handling **hazardous materials** is shared by three parties:

1. the employer,
2. the worker, and
3. the supplier.

The Employer

- The employer must tell you what hazardous materials you may come into contact with on the site.
- He/she must make sure that all hazardous materials on the job site are marked or labelled properly, in accordance with WHMIS rules.
- Employers must have safe procedures for the use, handling, storage and disposal of hazardous materials that are in use on the site. They must also have procedures for handling emergencies involving hazardous materials.
- The employer is required to provide you, the worker, with training on:
 1. How to use WHMIS labels and Material Safety Data Sheets. You must also be told where MSDS's are kept. Workers should have easy access to Material Safety Data Sheets either through the use of posters, computers, or binders containing the sheets.

2. Procedures for the safe use, storage, handling and disposal of the hazardous materials on site.
3. Procedures to follow in case of an emergency involving the hazardous materials.
4. Information on other means of identification, specific to the workplace. This may include colours, letters or numbers.

- The employer is responsible for supplying and replacing all safety equipment.

The Worker

You have the responsibility to:

1. Receive information and be informed about hazardous materials at the site.
2. Learn how to use WHMIS. (This part of the “Workplace Safety: Safety and the Young Worker Program” allows you to work towards meeting this responsibility.)
3. Follow recommended procedures to protect yourself and others.
4. Inform your employer of hazards and/or damaged and missing labels.

The Supplier

The supplier must provide labels and the information on the Material Safety Data Sheets. The information on labels and MSDS are the foundation of the safe handling of hazardous materials.



Main Objectives

Underline/highlight the answers to these questions as you read.

- Who shares the responsibility for safe handling of hazardous materials?
- What are the main responsibilities of each party?
- What are the three main types of labels?



Quick Quiz #9

Mark an “E” for employer’s responsibility or an “ME” for the worker’s responsibility for each of the following:

1. Provide training on how to use WHMIS.
2. Learn how to use WHMIS.
3. Provide training on procedures for the safe use, storage and handling of the hazardous materials on site.
4. Learn and follow procedures for the safe use, storage and handling of the hazardous materials on site.
5. Recognize special colour, number or letter codes on pumps, pipes and vessels carrying hazardous materials.
6. Develop emergency procedures and supply training to follow them.
7. Clearly mark or label pumps, pipes and vessels carrying hazardous materials.

Answers:

1E 2ME 3E 4ME 5ME 6E 7E

The responsibility for safely handling hazardous materials is shared by three parties.

Labels

The Workplace Hazardous Materials Information System has labels which are used to identify hazardous materials. The purpose of these labels is to alert workers to the main hazards of products and provide procedures for working with them, as well as to direct workers to the second part of the information system, the Material Safety Data Sheet.

There are three main types of WHMIS labels:

1. **Supplier Labels** – placed on the container by the manufacturer or supplier. The materials are then shipped to the workplace.
2. **Workplace Labels** – placed on hazardous materials when needed on the job site. When any hazardous material is taken out of its supplier container and put into another container, workplace labels must be applied to the new container.
3. **Other Means of Identification:** At the work site, pipes, tubes, pumps or vessels may be used to transport hazardous materials from one place to another. Since each work site may be different, the employer has to develop ways of warning the worker that there are hazardous materials present. Sometimes coloured flags or tapes are attached, or the containers are coloured. As each employer has developed his own system for warning employees, it is necessary that the employees be trained to recognize this **other means of identification used by the employer.**

Other Means of Identification

Where a controlled product at a work site is contained or transferred in:

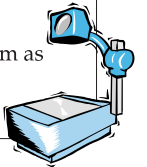
Piping System	Tank Car
Reaction Vessel	Conveyor Belt
Process Vessel	

These situations make labelling impossible and an employer must use some other means to identify the chemicals and the hazards they represent to workers.

Other means could be:

Colour Coding Pipes	Wrap around ID Tags
Placards	Number System
Colour Coding Tape	Notice Signs

Employees must be trained in the identification system as well as the hazards involved.



Supplier Labels

When hazardous materials enter the workplace, the supplier label is the first warning sign to you that hazardous materials are present. The label may be placed on the container of hazardous materials by the supplier before shipping, or the supplier label may be included with the shipment and placed on the containers by the receiver when the shipment arrives at the workplace. The supplier label has a special “hatch” border to draw attention to it. You should be aware from the label that hazardous materials are present.

Suppliers must provide supplier labels on containers of products sold or imported into the workplace.

The supplier label provides seven types of information:

1. **Product Identifier** – the name of the hazardous materials.
2. **Supplier Identifier** – the name and address of the supplier.
3. **MSDS Statement** – a statement indicating that a Material Safety Data Sheet for that material is available in the workplace.
4. **Hazard Symbol** – one or more of eight WHMIS hazard symbols relevant to the hazardous material.
5. **Risk Phrase** – a brief description of the hazard and the effects of exposure on the body.

6. **Precautionary Measures** – brief instructions for the safe use of the materials.
7. **First Aid Measures** – how to treat persons who have been exposed to the material.

Acceptable Format for the Supplier Labels

PRODUCT IDENTIFIER
IDENTIFICATEUR DU PRODUIT

Risk Phrase(s)		Locution(s) de risques
Precautionary Statement(s)		Mesure(s) de prevention
First Aid Measures		Mesures de secours d'urgence

SEE MATERIAL SAFETY DATA SHEET.
VOIR LA FICHE SIGNALÉTIQUE

SUPPLIER IDENTIFIER
IDENTIFICATEUR DU FOURNISSEUR



Quick Quiz #10



1. Supplier labels can only be placed on a container by:
 - a) supplier
 - b) distributor
 - c) receiver
 - d) all three could place the supplier label on a container
2. Hazardous material which are transferred from one container into another container require what type of label?
 - a) supplier label
 - b) workplace label
 - c) other means of identification

Answers:
1D 2C



The responsibility for safely handling hazardous materials is shared by three parties.

Quick Quiz #10

continued



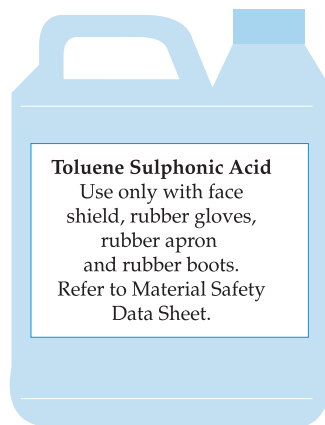
- How many parts are there in a regular supplier label and a workplace label?
 - 5 parts to each label
 - 7 parts and 3 parts, respectively
 - 5 parts and 4 parts, respectively
- What are the brief instructions on the safe use of the hazardous materials called?
 - MSDS statement
 - risk phrase
 - precautionary measures

Answer:
4C 3B

There is no specific rule for the size, shape or colour of the label except that it must be a colour that distinguishes it from the container. In other words, a yellow label is not allowed on a yellow drum or a blue label on a blue bottle, and so on.

A problem arises when the container with the hazardous material is small. It is difficult to fit a label with all the above information on a small bottle. When the container is less than 100 millilitres, or one-third of a can of pop, only the following information is required on the supplier label:

- product identifier,
- supplier identifier,
- a statement making reference to a MSDS, and
- hazard symbols showing the dangers associated with the hazard.



Job sites should not have any unlabelled containers.

Reasons for a workplace label:

When workers are unable to read English or French.

For products produced on site.

Replacing labels that have been lost or damaged during transport.

When the chemical from one container is placed into another container.

(Decanting)



Workplace Label

These labels must be placed on hazardous materials produced in the workplace or on hazardous material moved out of its original container into a new container. The workplace label is supplied by the employer and contains less information than the supplier label. It does not need to show a hazard symbol and is required to give only three of the seven kinds of information:

- product identifier,
- precautionary measures, and
- a statement telling the reader that a Material Safety Data Sheet is available for the material.

There are no specific requirements for the colour, size or shape of the workplace label and it has no special border.

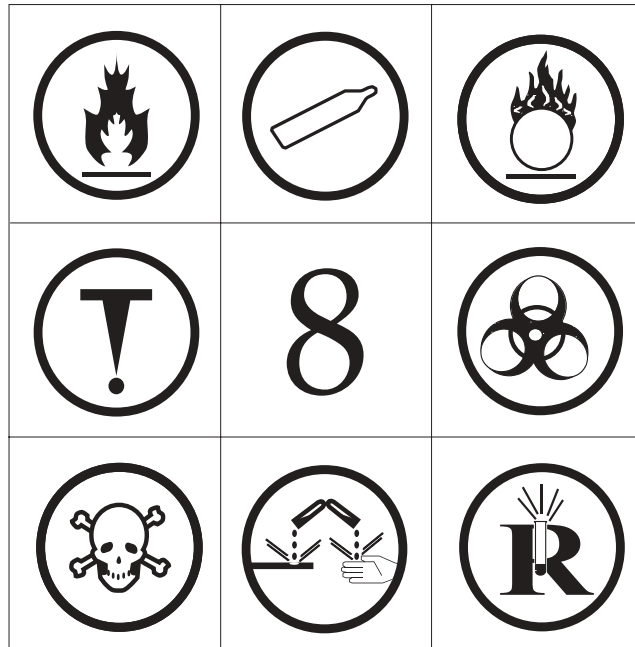
WHMIS: Product Classification and Hazard Symbols – Lesson 6

On the supplier label you will notice that there is a symbol which indicates the type of hazard the material presents in the container.

The eight symbols are organized into **six different classes** of **hazardous materials**. These classes are lettered **A through F**. Class D, which is poisonous and

infectious materials, has three divisions for different types of poisons. Each of these divisions has a symbol. Class B, flammable and combustible materials, is also divided into divisions. Unlike Class D, however, it does not have symbols for each of its divisions.

Symbols



Main Objectives

Underline/highlight the answers to these questions as you read.

- What are the eight basic hazard symbols?
- Identify examples associated with each hazard symbol.

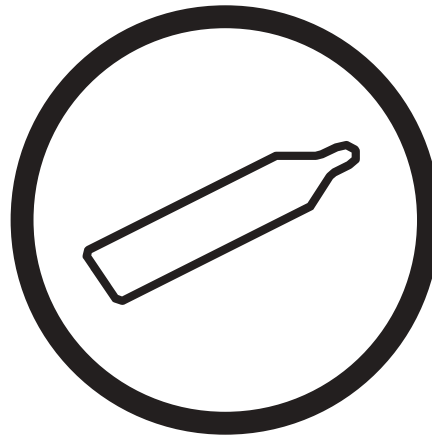


There are eight different symbols used to indicate the type of hazard of the materials in the container.

Class A – Compressed Gas

“A container with this symbol can explode and take off like a rocket.”

Compressed Gas

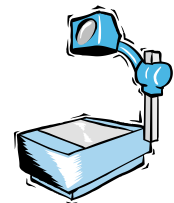


These products must be stored and handled very carefully. Puncturing or damaging the container or allowing the container to become hot could result in an explosion.

Examples:

Oxygen, Acetylene, Propane, aerosol spray cans

Overhead – 6C



Flammable and Combustible Material



Examples:
Gasoline, Heating Fuel



“A material with this symbol can burst into flames very suddenly.”



There are eight different symbols used to indicate the type of hazard of the materials in the container.

Class B – Flammable and Combustible Material

Class B, flammable and combustible material, is divided into divisions. Unlike Class D, however, it does not have symbols for each of its divisions.

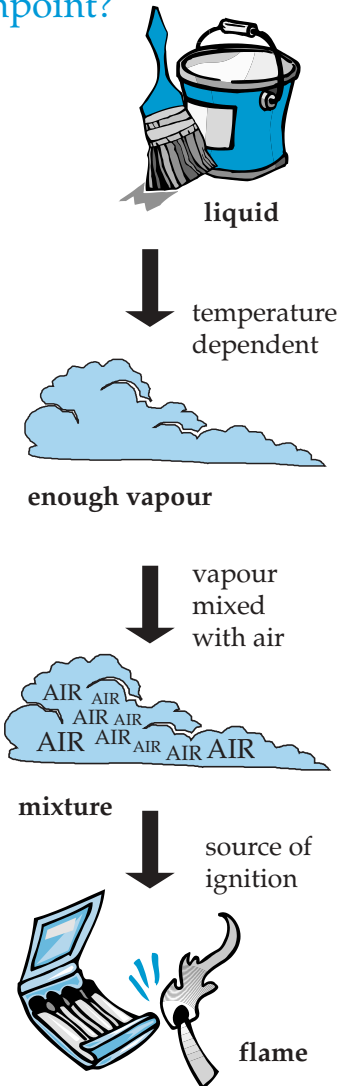
Class B divisions are:

- Division 1 flammable gases
- Division 2 flammable liquid
(flashpoint below 37.8 degrees Celsius)
- Division 3 combustible liquid
(flashpoint greater than 37.8 degrees Celsius)
- Division 4 flammable solid
(can be ignited by heat or friction)
- Division 5 flammable aerosol
(small drops of a liquid suspended in air)
- Division 6 reactive flammable material
(flammable in air)

What is a Flashpoint?

When a liquid evaporates it gives off a vapour. The vapour combines with air to form a mixture. If enough vapour is present and mixed with air, the mixture can be ignited. A **flashpoint** is the lowest temperature at which a liquid gives off enough vapour to form a mixture that can produce a flame.

A flashpoint is the lowest temperature for the sequence to occur.



Oxidizing Material



Gives off oxygen that could help other material to burn.

Examples:

Bleach and Ammonium Nitrate can cause flammable materials to burn rapidly

Overhead – 6E



“Chemicals in a container with this symbol will either feed oxygen into any fire, or act in a like manner, making it larger and hotter.”



There are eight different symbols used to indicate the type of hazard of the materials in the container.

Class D, Division 1 – Poisonous and Infectious Material

“A chemical with this symbol will cause immediate and severe poisoning.”

Poisonous Material

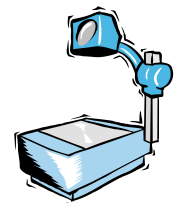


Material causing immediate (acute) and serious toxic effect.

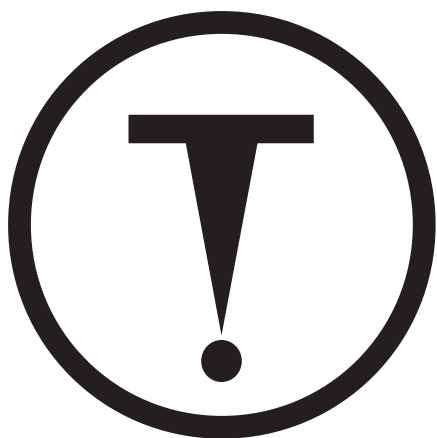
Examples:

Cyanide, Hydrogen Sulphide, Chlorine

Overhead – 6F



Toxic Material



Materials causing other toxic effects. Long-term (chronic) effects may be eye and skin irritation.

Examples:

Asbestos fibres, Silica, PCBs, vapours of many solvents

Overhead – 6G



“A chemical with this symbol can cause slow poisoning and long-term illnesses.”



There are eight different symbols used to indicate the type of hazard of the materials in the container.

Class D, Division 3 – Biohazardous Material

“A material with this symbol can give you a serious disease.”

Biohazardous Material

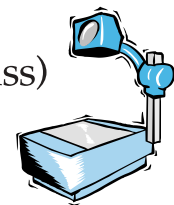


Infectious material
or live bacteria.

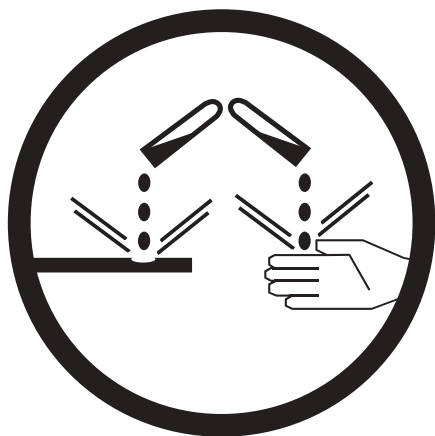
Examples:

HIV, Hepatitis (e.g. blood, semen), Anthrax (e.g. animal carcass)

Overhead – 6H



Corrosive Material



Causes burns
to skin, eyes.

Examples:

Acids (e.g. car battery) and Alkalines (e.g. lime)

Overhead – 6I



*“A chemical with this
symbol can seriously harm
your eyes and burn your
skin.”*



There are eight different symbols used to indicate the type of hazard of the materials in the container.

Class F – Dangerously Reactive Material

“A chemical with this symbol may EXPLODE if roughly handled.”

Dangerously Reactive Material



Can burn or explode if exposed to heat, shocked, or mixed with other products.

Examples:

Nitroglycerine, Picric Acid, Magnesium Metal

Overhead – 6J



Match the hazard to the correct WHMIS symbol by drawing a line from the words to the correct symbol. Check your work by referring back to the previous pages.

Biohazardous/Infectious

Poisonous

Other Toxic Effects

Flammable/Combustible

Oxidizing

Corrosive

Dangerously Reactive

Compressed Gas





There are eight different symbols used to indicate the type of hazard of the materials in the container.



Quick Quiz #11

True or False

1. There are six different classes of hazardous materials.
2. There are nine hazard symbols which are most often used.
3. The class of hazard materials which has more than one symbol is flammable and combustible materials.
4. Biohazardous and toxic materials both belong to the class of materials associated with Poisonous and Infectious Materials.
5. A corrosive material is one that gives off oxygen that could help other materials to burn.

Answers:

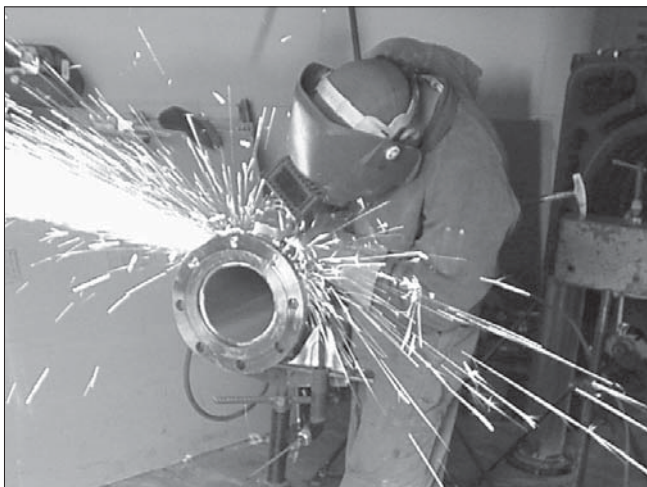
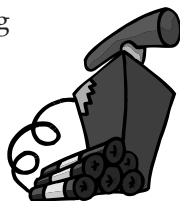
1T 2F 3F 4T 5F

Workplace Hazardous Materials Information Activity	Part One	Part Two
Complete this chart by answering the question asked in the first column, and following the directions in Part One and Two. Note: In the workplace, these hazards are controlled by WHMIS.	Place a check by all "yes" responses.	Using your symbols from the previous section, identify the appropriate WHMIS class for the substances identified in each statement.
1. Do you use "white-out" or liquid paper?		
2. Have you or your parents ever used rat or mouse poison?		
3. Have you ever used bleach?		
4. Have you ever used a propane barbecue?		
5. Have you ever used a bunsen burner?		
6. Have you ever picked up an old battery?		
7. Have you ever filled a car or snowmobile with gas?		
8. Have you ever painted with oil paints?		
9. Have you ever sat in a car while it was running?		
10. Have you ever used dry ice?		
11. Have you ever touched raw meat?		

Answers: 1D 2D 3D 4B 5B 6E 7B 8B 9B 10D 11D

Exemptions

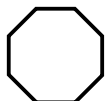
Some products such as pesticides, explosives, and certain consumer products do not require the distinctive WHMIS label because they are already covered under other labelling laws. WHMIS requires employers to provide training to workers. If these products are transferred to small containers, WHMIS requires that workplace labels be applied.



Consumer Warning Labels

Consumer warning labels are very similar to WHMIS labels, but are framed in shapes that look like road signs:

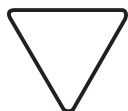
The STOP sign shape is used to alert you to the highest level of warning.



The DIAMOND shape warns you to be very careful.



The UPSIDE DOWN TRIANGLE looks like a yield sign and alerts you to use caution when handling products labelled with this shape.



For more **INFO** on this lessons topic



Refer to the videos *The Winning Label*, and *Steering Clear of Hazardous Materials – Part 2* (optional), available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

For a quick review of the WHMIS symbols and a look at consumer warning labels, view Part Two of the video entitled "Steering Clear of Hazardous Materials".

WHMIS: MSDS and Control of Hazardous Materials – Lesson 7

The Materials Safety Data Sheet (MSDS) is a very important technical document. There must be a MSDS for every controlled product in the workplace.

Federal law requires that a supplier provide an MSDS for each **controlled product**. NWT and Nunavut law requires the employer to have a MSDS available for every **hazardous material** in the workplace. The MSDS must be readily accessible to all workers, worker representatives and members of the joint Health and Safety Committee.

Every MSDS must be current (up to a maximum of three years is allowed between updates). The MSDS must be revised immediately after a new hazard information becomes known about the material.

The MSDS must have nine main sections containing information the employer should be aware of. None of these sections should be left blank but their order may vary. There may be more sections, depending on the product, but the following nine sections must be on every MSDS.





1. Product identification and use – the product name, identification number and use, as well as information on how to contact the supplier or manufacturer.
2. Hazardous ingredients – the identity of the ingredients, their concentrations and estimates of immediate and severe health effects.

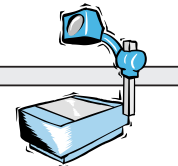
Main Objectives

Underline/highlight the answers to these questions as you read.

- What are the nine main sections on a MSDS?
- What are three ways to control hazardous materials?
- What is sensitization?
- What are your three basic rights when it comes to health and safety?

Material Safety Data Sheet

					
WHMIS (Pictograms) 	WHMIS (Classification) B-2, D-2A, D-2B	Protective Clothing 	TDG (pictograms) 		
Section 1. Chemical Product and Company Identification					
Product Name GASOLINE, UNLEADED		Code W102E			
Synonym Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean WinterGas, RegularClean, PlusClean, Premium, marked or dyed gasoline, Super Premium (94 RD)		Validated on 06/20/2001.			
Manufacturer PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3		In case of Emergency Petro-Canada: 403-296-3000 Canuloc Transportation: 613-996-0666 Poison Control Centre: Consult local telephone directory for emergency number(s).			
Material Uses Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recreational vehicles.					
Section 2. Composition and Information on Ingredients					
		<i>Exposure Limits (ACGIH)</i>			
Name	CAS #	% (V/V)	TLV-TWA(8 h)	STEL	CEILING
1) Gasoline	8006-61-9	85-100	300 ppm (890 mg/m ³)	500 ppm (1480 mg/m ³)	Not established
2) Methyl tert-butyl ether	1634-04-4	0-15	40 ppm (144mg/m ³)	Not established	Not established
Manufacturer Recommendation Not applicable		Other Exposure Limits Consult local, state, provincial or territory authorities for acceptable exposure limits.			
Section 3. Hazards Identification.					
Potential Health Effects Possible cancer hazard. Inhalation of vapours can be irritating to respiratory tract and cause CNS depression with symptoms of nausea, headaches, vomiting, dizziness, fatigue, light-headedness, reduced coordination, unconsciousness and possibly death. Skin and eye contact can cause irritation. Toxic if ingested. For more information, refer to Section 11.					
Section 4. First Aid Measures					
Eye Contact IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention.					
Skin Contact Remove contaminated clothing - launder before reuse. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. Seek medical attention.					
Inhalation Evacuate the victim to a safe area as soon as possible. If the victim is not breathing, perform artificial respiration. Allow the victim to rest in a well ventilated area. Seek medical attention.					
Ingestion DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.					
Note to Physician Not available					
Section 5. Fire-fighting Measures					
Flammability Flammable liquid (NFPA).		Flammable Limits Lower: 1.3%; Upper: 7.6% (NFPA).			
Flash Points Closed Cup: -50 to -38°C (-58 to -36°F). ASTM D56 Standard Test Method for Flash Point by Tag Closed Tester.		Auto-Ignition Temperature 257°C (495°F) (NFPA).			
Fire Hazards in Presence of Various Substances Extremely flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition.		Explosion Hazards in Presence of Various Substances		Do not cut, weld, heat, drill or pressurize empty container. Containers may explode in heat of fire. Vapours may form explosive mixtures with air.	
Products of Combustion Carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), polynuclear aromatic hydrocarbons, phenols, smoke and irritating vapours as products of incomplete combustion.					
<small>Continued on Next Page Available in French</small>					



Across Canada, the law guarantees workers three basic rights when it comes to health and safety.

3. Physical data – a physical description of the product.
4. Fire and explosion data – information on the ability of the product to catch fire or explode, and means of extinguishing a fire.
5. Reactivity data – the ability of the product to react dangerously.
6. Toxicological properties – information on how materials enter the body and the short and long-term health effects.
7. Preventative measures – information on control measures including ventilation, personal protective equipment (gloves, respirators, etc.) and work procedures.
8. First aid measures – information on immediate treatment in case of contact with the product that results in illness or injury.
9. Preparation information – information on who prepared the MSDS and when.

Exemptions

Some companies do not want to disclose information on the MSDS because they would be giving away trade secrets. Some cleaners and soaps are examples of this. These companies submit a request to a committee that approves or turns down the request. Other situations arise where consumer products fall under other laws; when this occurs the MSDS does not have to have all parts completed.

Reminder

MSDS's must be readily available to all workers at all times. Did you really understand the MSDS? Here are some questions the worker should be able to answer.

1. Can this product harm your health? Do you know the symptoms that warn you of over-exposure?
2. Can this product burn or explode?
3. Does your work site need any control measure such as special ventilation?
4. Does this product require special handling precautions?
5. Do you need any personal protective equipment?
6. Do you need to be careful when mixing this product with any other chemicals? Which ones?
7. Does this product require any special storage conditions?
8. Do you know what to do in case of an over-exposure?
9. Do you know the first aid measures needed in case of an over-exposure?
10. Do you know what to do in case of a spill or leak?
11. Do you know where the emergency response equipment is and how to use it?





Across Canada, the law guarantees workers three basic rights when it comes to health and safety.



Superior Propane Inc.		MATERIAL SAFETY DATA SHEET	
SECTION 1 – PRODUCT INFORMATION			
Product Name: Propane	Supplier: Superior Propane Inc.		
Trade Name: LPG (Liquified Petroleum Gas), LP-Gas	1111 - 49th Avenue N.E.		
Chemical Formula: C ₃ H ₈	Calgary, AB T2E 8V2		
WHMIS CLASSIFICATION	Business: (403) 730-7500		
Class A - Compressed Gas	Local Branch		
Class B, Division 1 - Flammable Gas	Emergency Number:		
	(Non Medical)		
Application and Use: Propane is commonly used as a fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.			
SECTION 2 – HAZARDOUS INGREDIENTS			
COMPONENTS	CAS NO.	% Volume (v/v)	LD50
Propane	74 -98-6	90% - 99%	Not Applicable
Propylene	115 -07-1	0% - 5%	Not Applicable
Ethane	74 -84-0	0% - 5%	Not Applicable
Butane and heavier hydro carbons	106 -97-8	0% - 2.5%	Not Applicable
Occupational Exposure Limit: Based upon animal test data, the acute toxicity of this product is expected to be inhalation: 4 hour LC50 = 280,000 ppm (Rat). Note: Composition is typical for HD-5 Propane per The Canadian General Standard Board CGSB 3.14 National Standard of Canada. Exact composition will vary from shipment to shipment.			
SECTION 3 – CHEMICAL AND PHYSICAL DATA			
Form: Liquid and vapour while stored under pressure.			
Boiling Point: -42°C @ 1 atm.			
Freezing Point: -188°C			
Evaporation Rate: Rapid (Gas at normal ambient conditions).			
Vapour Pressure: 1435 kPa (maximum) @ 37.8°C			
Vapour Density: 1.52 (Air = 1)			
Coefficient of Water/Oil Distribution: Not available.			
pH: Not available.			
* With proper handling, transportation and storage, adding a chemical odourant such as eth-merc has proven to be a very effective warning device, but all odourants have certain limitations. The effectiveness of the odourant may be diminished by a person's sense of smell, by competing odours and by oxidation which may cause a potentially dangerous situation.			
Solubility in water: Slight, 6.1% by volume @ 17.8°C			
Specific Gravity: 0.51 (water = 1)			
Appearance/Odour: Colourless liquid and vapour while stored under pressure. Colourless and odourless gas in natural state at any concentration. Commercial propane has an odourant added, ethyl mercaptan, which has an odour similar to boiling cabbage.*			
Odour Threshold: 4800 ppm			
SECTION 4 – FIRE OR EXPLOSION HAZARD			
Flash Point: -103.4°C			
Method: Closed cup.			
Flammable Limits: Lower 2.4%, Upper 9.5%			
Auto Ignition Temperature: 432°C			
Products Evolved Due To Heat Or Combustion: Carbon monoxide can be produced when primary air and secondary air are deficient while combustion is taking place.			
Fire and Explosive Hazards: Explosive air-vapour mixtures may form if allowed to leak to atmosphere.			
Sensitivity To Impact: No.			
Sensitivity To Static Discharge: Yes.			
SECTION 5 – REACTIVITY DATA			
Stability: Stable.			
Conditions To Avoid: Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chloride dioxide.			
Incompatibility: Remove sources of ignition and observe distance requirements for storage tanks from combustible material, drains and openings to building.			
Hazardous Decomposition Products: Deficient primary and secondary air can produce carbon monoxide.			
Hazardous Polymerization: Will not occur.			
Fire Extinguishing Precautions: Use water spray to cool exposed cylinders or tanks. Do not extinguish fire unless the source of the escaping gas that is fueling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC). Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If sufficient water is not available to protect the container shell from weakening, the area will be required to be evacuated. If gas has not ignited, liquid or vapour may be dispersed by water spray or flooding.			
Special Fire Fighting Equipment: Protective clothing, hose monitors, fog nozzles, self-contained breathing apparatus.			

SECTION 6 – TOXICOLOGICAL PROPERTIES OF MATERIAL

ROUTES OF ENTRY:

Inhalation: Simple asphyxiant. No effect at concentrations of 10,000 ppm (break exposures). Higher concentrations may cause central nervous system disorder and/or damage. Lack of oxygen may cause dizziness, loss of coordination, weakness, fatigue, euphoria, mental confusion, blurred vision, convulsions, breathing failure, coma and death. Breathing high vapour concentrations (saturated vapours) for a few minutes may be fatal. Saturated vapours may be encountered in confined spaces and/or under conditions of poor ventilation. Avoid breathing vapours or mist.

Skin and Eye Contact: Exposure to vaporizing liquid may cause frostbite (cold burns) and permanent eye damage.

Ingestion: Not considered to be a hazard.

Acute Exposure: The acute toxicity of this product is expected to be inhalation: 4 hour LC50=280,000ppm (Rat).

Chronic Exposure: There are no reported effects from long term low level exposure.

Sensitization to Product: Skin—unknown, Respiratory—unknown.

Occupational Exposure Limits: American Conference of Governmental Industrial Hygienists (ACGIH) lists as a simple asphyxiant. ACGIH TLV: 1000 ppm.

Carcinogenicity, Reproductive Toxicity, Teratogenicity, Mutagenicity: No effects reported.

SECTION 7 – PREVENTIVE MEASURES

Eyes: Safety glasses, goggles or a face shield is recommended when transferring product.

Skin: Insulated gloves required if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product.

Inhalation: Where concentration in air would reduce the oxygen level below 18% air or exceed occupational exposure limits in section 6, self-contained breathing apparatus is required.

Ventilation: Explosion proof ventilation equipment required in confined spaces.

SECTION 8 – EMERGENCY AND FIRST AID PROCEDURES

FIRST AID:

Eyes: Should eye contact with liquid occur, flush eyes with lukewarm water for 15 minutes. Obtain immediate medical care.

SPILL OR LEAK:

Eliminate leak of possible.
Eliminate source of ignition.
Ensure cylinder is upright.
Disperse vapours with hose streams using fog nozzles.
Monitor low areas as propane is heavier than air and can settle into low areas. Remain upwind of leak. Keep people away. Prevent vapour and/or liquid from entering into sewers, basements or confined areas.

Skin: In case of “Cold Burn” from contact with liquid, immediately place affected area in lukewarm water and keep at this temperature until circulation returns. If fingers or hands are frostbitten, have the victim hold his hand next to his body such as under the armpit. Obtain immediate medical care.

Ingestion: None considered necessary.

Inhalation: Remove person to fresh air. If breathing is difficult or has stopped, administer artificial respiration. Obtain immediate medical care.

SECTION 9 – TRANSPORTATION, HANDLING AND STORAGE

- Transport and store cylinders and tanks secured in an upright position in a ventilated space away from ignition sources (so the pressure relief valve is in contact with the vapour space of the cylinder or tank).
- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.
- Do not store with oxidizing agents, oxygen, or chlorine cylinders.

- Empty cylinders and tanks may contain product residue. Do not pressurize, cut, heat or weld empty containers.
- Transport, handle and store according to applicable federal and provincial regulations (CGA B149.2).

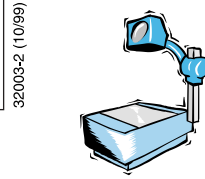
Transportation of Dangerous Goods (TDG)

- TDG Classification: Flammable Gas 2.1
- TDG Shipping Name: Liquefied Petroleum Gas (Propane)
- TDG Special Provisions: 56, 90, 102
- PIN Number: UN1075

SECTION 10 – PREPARATION

Superior Propane Inc., Regulations & Safety Department. (403) 730-7500 Date prepared: September 1999.
Supersedes: November 1996.

The information contained herein is believed to be accurate. It is provided independently of any sale of the product. It is not intended to constitute performance information concerning the product. No express warranty, implied warranty of merchantability or fitness for a particular purpose is made with respect to the product information contained herein.



32003-2 (10/99)

Side 2 of 2



Across Canada, the law guarantees workers three basic rights when it comes to health and safety.



Quick Quiz #12

True or False

1. There are nine sections to an MSDS.
2. The sections of an MSDS do not have to be in a specific order.
3. MSDS must be updated at least every three years.
4. With a special exemption you are allowed to leave a section of a MSDS blank.
5. Information on immediate treatment in case of contact with the product is an example of "Preventative Measures".

Answers:

FF TT TT TT TT

Control of Hazardous Materials

When hazardous materials are on the workplace, it is necessary to control them so that the safety of the worker is protected.

There are three routes that toxic substances may take to enter your body. These were listed earlier in the section on chemical hazards. The three routes are **inhalation**, **ingestion** and **absorption**.

Hazardous materials that enter the body may have two different effects.

Acute Effects – occur immediately or shortly after exposure. In some cases, the effect is immediate death.

Chronic Effects – do not show up until years later. The worker by this time may have had numerous exposures. The period between the exposure to the hazardous material and illness of the worker is referred to as the *latency period*.

Sometimes the body reacts strongly to defend against exposure. This is called **sensitization**. Examples of sensitization include rashes and asthma-like reactions such as wheezing and coughing. Sensitization is acquired over a period of exposures, but once sensitization occurs low level exposure to the materials will cause a strong reaction. The only solution to sensitization is to avoid exposure to the material.

The control of hazards on the work site is the role of the employer. A control measure is something used to prevent workers from becoming ill or having an accident. A control measure may involve the way something is done or where it is done. If you want to open a can, you use a can opener, not a hammer. If you do not want to get paint on furniture, you move or cover the furniture. These are examples of control measures.

In the workplace there are many different ways in which control measures are used. If a control measure is to be of benefit it must meet the following requirements:

1. It must adequately control the hazard. If the hazard is lethal there should be no contact. The level of the hazard must be reduced so that there is no danger for the worker.
2. The control measure must create no new **hazards**. For example, the cover on the furniture used to protect it from paint should be arranged so that someone cannot trip on it.
3. You must be able to do your job without unnecessary discomfort or stress. Protective clothing should fit properly. It should not be too big or too small.

- Every worker who comes in contact with the hazard must be protected by the control measure. If a lab technician uses gloves, shouldn't the nurses who take samples do so as well?
- The hazard must be eliminated from the surrounding community as well as the workplace. If a substance is harmful, why remove it from the work site and release it into the community? For example, taking materials to the dump where they could contaminate water and eventually fish.

Types of Control

There are three basic ways in which hazardous material can be controlled:

- At the source:** The hazardous material can be eliminated or substituted with a less hazardous substance or material, e.g. brake linings that do not contain asbestos.
- In the pathway:** Barriers can be used to keep hazards away, e.g. fume hoods in the science lab; storing chemicals that react when mixed far apart. Ventilation can be used to remove fumes or dilute the concentration of the hazardous substance by mixing it with fresh air.
- At the worker level:** Personal protective equipment can be used and workers can be removed and rotated out of hazard areas to keep exposure to dangerous chemicals below allowable limits.

As a worker involved in safety, you should always be aware of the effects of hazardous materials on you (**acute, chronic, sensitization**) and your co-workers. Your practices at work should be directed to prevent harm from coming to anyone. This involves knowing what is harmful. WHMIS is but one tool used to recognize hazards present in the workplace and to learn how to deal with them safely.

As stated in a previous lesson, laws across Canada guarantee workers three basic rights, when it comes to health and safety.

The first right is the **right to know** about possible hazards in the workplace. It is the responsibility of the employee to be aware of the necessary steps to protect themselves. Being knowledgeable in WHMIS is part of the right to know.



Quick Quiz #13



- What term describes an immediate reaction to a hazardous substance?
 - acute effects
 - chronic effects
 - sensitization
- Which is not an example of sensitization?
 - wheezing
 - sneezing
 - coughing
 - rash

Answers:
1A 2D



Across Canada, the law guarantees workers three basic rights when it comes to health and safety.

Quick Quiz #13

continued



3. Which is not an example of controlling a hazardous substance "in the pathway"?
- a) using ventilation or mixing it with fresh air
 - b) storing chemicals that react when mixed apart from each other
 - c) using a fume hood
 - d) substituting with a less hazardous material

Answer:
CE

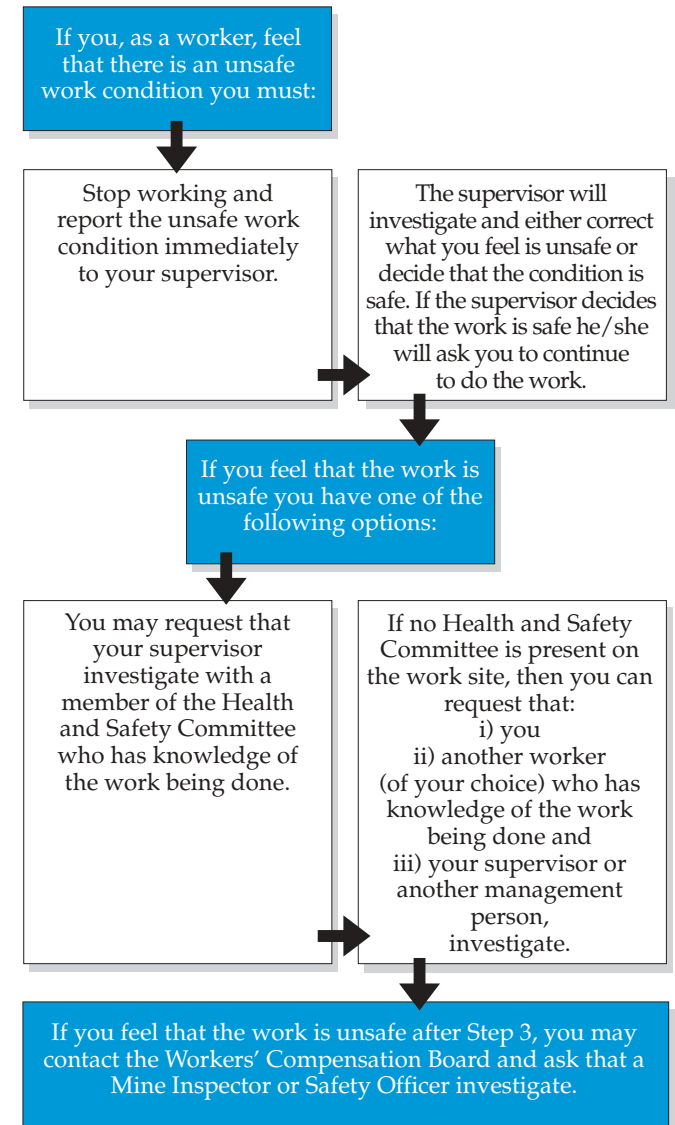
The second right is the **right to participate**. In the Northwest Territories and Nunavut, Occupational Health and Safety Committees are formed voluntarily or when the Chief Safety Officer (an employee of the Workers' Compensation Board) directs the employer to form one. This means that not all job sites will have a Joint Health and Safety Committee. The worker has the right to participate in:

- making recommendations to the Joint Work Site Health and Safety Committee where one exists, or
- reporting to his supervisor on health and safety issues where no Joint Work Site Health and Safety Committee exists.

With the knowledge the worker has gained through WHMIS training, he/she can help to make the work site safer.

The third right is the **right to refuse work** that the worker believes to be dangerous. As an example, with proper training in WHMIS, the worker can recognize situations that involve hazardous materials and may be dangerous. The worker can then make an informed decision to refuse unsafe work. The refusal to work must have reasonable grounds and involve an unsafe work condition. The employer cannot discipline or deny wages to a worker who refuses to do unsafe work.

The flow chart shows the steps that can be taken when a worker feels that work he is asked to do unsafe.



Handling, Carrying and Lifting

– Lesson 8

Manual Handling

There are **hazards** that are common to many different workplaces. These hazards must be recognized and managed so that the worker is protected from injury.

In just about any job there will be a situation that arises involving manual handling. Manual handling includes any task that requires the movement of objects by humans. Manual handling is any activity that requires the *use of force* by a person to lift, lower, push, pull, slide or hold objects.

Improper techniques used in manual handling can result in injuries such as strains, sprains, neck and back injuries, cuts, bruises, broken bones and **hernias**. These injuries may affect you for the rest of your life.

When you are manually handling an object **your balance, line of sight and reactions** may be affected. The load may block your vision of a step; you trip but cannot use your hands to balance or block your fall as they are holding the load. Injury can occur when a person falls while handling a load or drops the load onto the body. Fatigue also contributes to the chance of injury.



Before any object is moved you should consider these three things:

1. Nature of the load:

- Does the load have sharp edges?
- Does it contain hazards?
- Will parts fall or shift?
- Is the weight unbalanced?
- Are there any other hazards that may hurt me?
- Is it too heavy to be moved safely?
- How much does it weigh?
(It may be marked in the container.)

Main Objectives

Underline/highlight the answers to these questions as you read.

- Why are young workers more likely to be injured by manual handling?
- What are the steps for lifting?
- Explain the concept of "team lifting".



Quick Quiz #14

True or False

1. Manual handling includes any activity that requires the use of force by a person to lift and lower objects.
2. Manual handling includes any activity that requires the use of force by a person to push and pull objects.
3. Manual handling includes any activity that requires the use of force by a person to hold objects.
4. Young workers are better able to cope with manual handling and are less susceptible to injury than older, experienced workers.
5. Temperature and the amount of light are examples of working conditions that might affect your ability to move an object.

Answers:

T F T F T T

The most common injury that results from manual handling is a back injury.

2. Working conditions:

- How far does the load have to be moved?
- Are there any obstacles that may cause the worker to trip, slip or fall?
- Is there enough light for the worker to see where he is going and to see any obstacles?
- Is the temperature comfortable? Temperatures that are too cold lead to numbness of the hands; temperatures that are too warm cause workers to tire easily.
- Is the load too heavy?

3. Personal limitations:

- People vary in their ability to move things. This is determined by age, strength, body development, health and ability to deal with fatigue.

“A young worker was a nurse in a hospital in the Northwest Territories. She was over seven months pregnant. She was helping to lift a patient from one location to another. While lifting, she felt a sharp pain. Later in the day, she started to experience labour pains. The hospital was able to prevent the early birth of her child. However, she was required to remain in bed for two weeks.”

When it comes to **manual handling** of items in the workplace you should ask yourself six questions.

1. Must the load be moved?

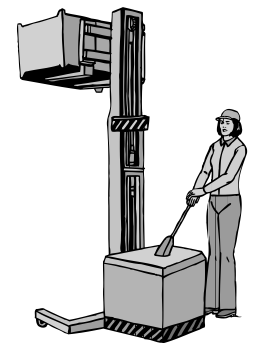
If the load does not need to be moved – don’t do it. Materials should be moved as little as possible. Why move something three times if you only have to move it once? Proper planning and organization at the work site will cut down on the amount of manual handling required. If the load must be moved then ask yourself the next question.

2. Must the load be lifted?

Lifting a load should be avoided. If a load can be slid, pushed, rolled, poured or moved in any other manner, do it before resorting to lifting. If the load must be lifted, then the next question to ask yourself is:

3. Can the load be moved using equipment?

Do not manually handle a load that can be moved by equipment. Cranes, fork lifts and winches are just a few of the mechanical tools that can be used.

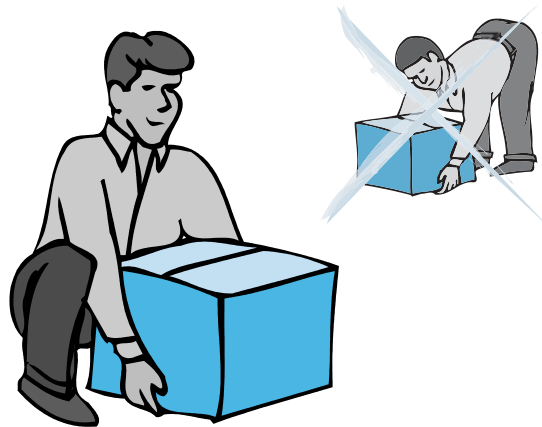


4. Can the load be reduced?

If it is necessary for you to lift the load, then make the load easy to manage. Dividing a load reduces its weight and bulk. Placing the load in smaller more manageable containers will reduce risk and difficulty.

Lifting correctly can help prevent this.

- Make sure your footing is firm. Place one foot forward beside the object; place the other foot slightly behind and hip width from the front foot.
- Always keep your back straight.
- Centre and balance your body over your feet.
- Pull the load close to your body.
- Use your whole hand, not the fingers to grip.
- Keep your arms as straight as possible.
- Lift with your legs not with your back.
- Move your feet. Don't twist your back to turn.



5. Is it better to use more than one person to lift?

If the load must be moved, it must be lifted. If it can't be moved mechanically and cannot be broken into smaller components, it may be necessary for team lifting to be used. If possible, those doing team lifting should be close in height and physique. One person should be in charge and be responsible for organizing. Each individual in the team lift should follow the same safe lifting procedures used in an individual lift. The team coordinator gives a count and the team lifts in unison.

6. Is the load too heavy for a team to lift safely?

If the load is too heavy or awkward for a team to lift, then do not lift it. Another safe solution for lifting the object can usually be found. Always be sure that you lift carefully and safely.

For more **INFO** on this lessons topic



Refer to the video *Dealing with Manual Handling* (Safety Care Series), available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Quick Quiz #15



1. Before a load is moved, you should consider:
 - a) nature of load
 - b) working conditions
 - c) personal limitations
 - d) all of the above
2. Put the following sequence in its proper order for lifting an object.
 - a) Use your whole hand, not just the fingers to grip. Keep your arms as straight as possible.
 - b) Centre and balance your body over your feet. Pull the load close to your body.
 - c) Lift with your legs not with your back. Move your feet. Don't twist your back to turn.
 - d) Make sure your footing is firm. Place one foot forward beside the object; place the other foot slightly behind and hip width from the front foot. Always keep your back straight.

Answers:
1 D 2D, B, A, C

Noise

– Lesson 9

Main Objectives

Underline/highlight the answers to these questions as you read.

- What are the warning signs of hearing loss?
- Identify ways to eliminate or control noise hazards?

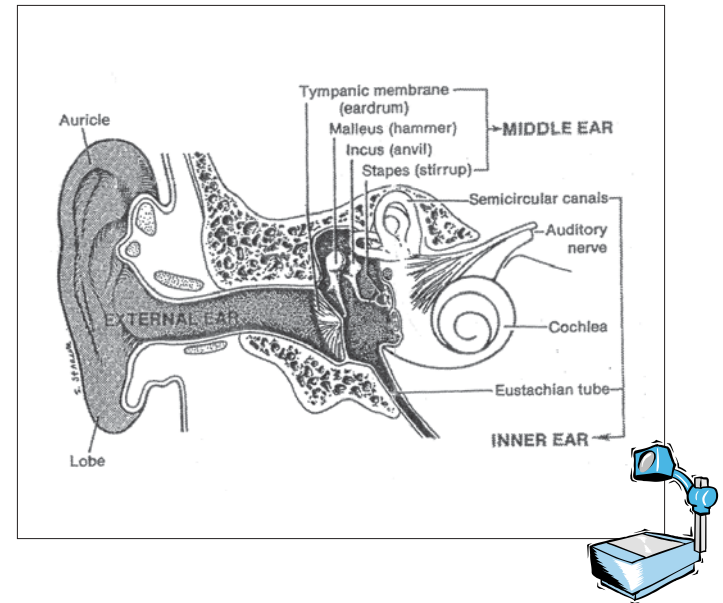
Noise and the Workplace

At work, you are exposed to many different types of sounds. Some sounds may be annoying to you but may not hurt your hearing. Some sounds may be pleasurable to you but can cause damage. Hearing is hurt or lost, when it is exposed to loud noise for a long time, or if there is frequent exposure to loud noise.

When someone's hearing is lost or impaired, it affects his/her life in many negative ways. For example, people who talk to him/her must raise their voices, or even yell. People with a hearing loss are left out of conversations and social activities. On the job, people with hearing loss may miss instructions or not hear a fellow worker's yelled warning.

Hearing loss may happen quickly, or it may happen so slowly that the loss is not noticed. The loss may be permanent or temporary. If you have temporary hearing loss, your hearing will return after you are away from loud noise for a period of time.

Permanent hearing loss may occur if you are exposed to loud noise for a period of months or years. In permanent hearing loss, there is permanent damage done to nerve endings, called cilia, located in the cochlea in the inner ear.

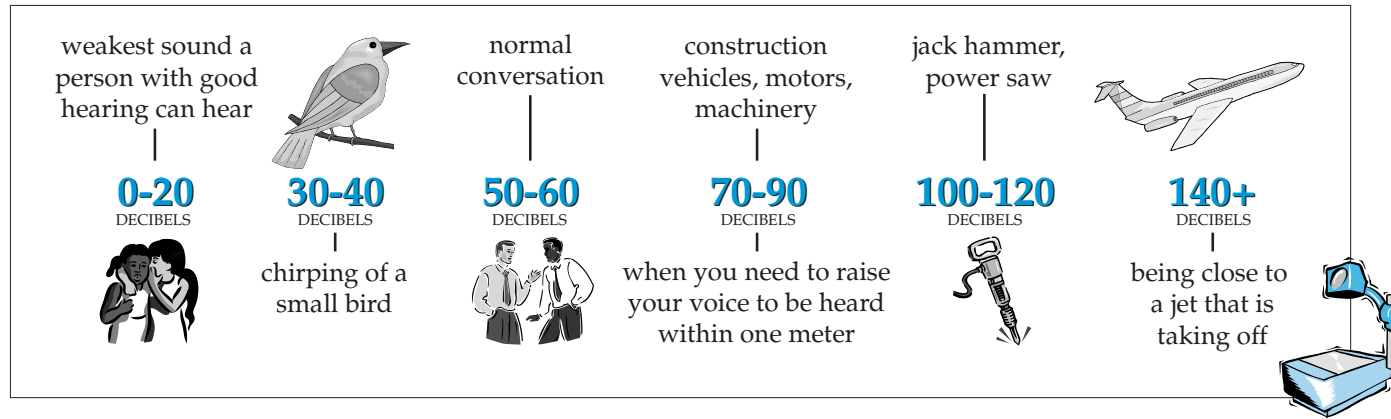


Some early warning signs of hearing loss are:

- ringing in the ears after exposure to noise,
- difficulty hearing and understanding when people are talking,
- having to turn up the volume on the radio or television, and
- not hearing the telephone or doorbell ring

If you are experiencing any of the above warning signs and think that you are exposed to loud noises on or off the job, now is the time to take action to prevent further hearing loss.

You will never get used to loud noise; you will lose your hearing instead.



Sound and Decibels

Often workers are told that they will “get used to” the noise on the job and not hear it anymore. People never “get used to” noise; what is occurring is hearing loss. The area of the ear that receives sound energy is being damaged and cannot do its job. As a result the sound is not heard. This loss may be temporary but will become permanent unless efforts are made to lessen the noise that enters the ear.

If you are on a job where you are exposed to noise that averages 85 decibels or more, then there should be precautions taken to prevent hearing loss.

Always use sound discretion when choosing your hearing protection.

There are ways to control or eliminate noise hazards:

- **The Source** – redesigning the equipment to reduce noise or using another type of equipment.
- **In the Pathway** – sound barriers; enclosing the noisy equipment or rotating the workers from the noisy areas.
- **Control at the Worker Level:** There are many different types of personal protective equipment that you may wear to protect your hearing. When choosing the protection you will use, make sure that the equipment is comfortable and fits with any other equipment that is necessary on the job. Hearing protectors include earmuffs which fit over the ears and plugs that insert into the ears. Some inserts are disposable and can fit anyone’s ears while other inserts must be fitted to the user’s ears.

Quick Quiz #16



True or False

1. Having difficulty hearing and understanding when people are talking may be an early warning sign of hearing loss.
2. On most work sites, you will eventually “get used to” noise.
3. Redesigning equipment to reduce noise is an example of controlling noise “at the source”.

Answers:

T F T T

“Protect your ears for future years.”



You will never get used to loud noise; you will lose your hearing instead.



Quick Quiz #17

True or False

1. Headphones from CD players and tape players can help protect you from noise.
2. Noise hazards can be eliminated by rotating workers from noisy areas and by using personal protective equipment.
3. If you are on a job where you are exposed to noise that averages 85 decibels or more, then there should be precautions taken to prevent hearing loss.

Answers:
1 F 2 T 3 F

Hearing protectors should be regularly cleaned and maintained. Sharing of earplugs may allow ear infections to be passed from one worker to another. Damaged parts should be replaced immediately. Headphones for radios, CD players and tape players are not designed to protect your hearing so do not consider them personal protective equipment.

“Retaining your ability to hear depends on your wearing the proper safety gear.”

For more INFO on this lessons topic



Refer to the video *Walkman Generation*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

“Will listening to my portable walkman cause hearing damage?”



A hearing test is a simple procedure that can be carried out by a nurse at the local health centre. This test lets you know whether you have experienced any hearing loss and may be used later to compare with future hearing tests. Testing may show if you have loss of hearing, but only you can prevent the loss in the first place. Always wear the correct type of hearing protection for the job.

Many people only listen to their portable walkmans for ten minutes each day. Depending on the volume control setting, damage may occur even for a short period of time. Damage can occur if the portable player is worn at volume #6 for only 30 minutes per day. This would be approximately equal to volume #2 (out of 10) for 40 hours each week. Research indicates that exposure to any level over volume #2 (out of 10) may produce the noise level known to permanently damage hearing.

Mechanical Equipment, Tools and Safety

– Lesson 10

Mechanical Equipment

Many jobs require the safe handling of mechanical equipment. Mechanical equipment ranges from machines that are very large in size, down to those that are hand-held. Some machines involve the use of power, while others do not. All have the potential to harm the user.

Machines have been developed to help increase output while lessening the effort of workers. Some machines specialize in increasing forces, while others specialize in the performance of dangerous tasks. As there are often moving parts on machines, you are exposed to **hazards** that may lead to injury.



When you are working with machines, a variety of injuries can be caused. Examples of these injuries include:

- amputations
- fractures
- crush injuries
- dislocations
- open wounds
- strains and sprains
- electrocution

Along with the hazards of direct contact with machinery there are hazards that result from being near machinery:

- being hit by objects from the machinery
- heat
- noise
- fumes
- chemicals

The more you are exposed to mechanical equipment on your job, the greater the number of hazards. The following are examples of mechanical equipment:

Machinery:

- pumps
- cutting and slicing machines
- power generators
- presses



Main Objectives

Underline/highlight the answers to these questions as you read.

- What do these terms mean?
 - guards
 - lock out
 - tag out
- Identify four pieces of personal protective equipment.
- Identify examples of powered and non-powered hand tools.



Pay attention at all times when you are near equipment, including vehicles.

“A young worker was working around moving parts at a fish canning plant. Her long hair got caught in the moving equipment and she was partially scalped.”

“A young northern worker was a passenger in a vehicle that was delivering garbage to the town dump. When the vehicle went off the road, he hit his head on the windshield and missed work because of the pain from whiplash.”

Transport Equipment:

- wheelbarrows
- four wheelers
- snowmobiles
- boats
- vehicles: trucks, vans, cars

Powered Equipment:

- chainsaws
- pressure cookers
- welding equipment
- copying machines
- blenders
- electric knives
- drills

Non-powered Hand Tools:

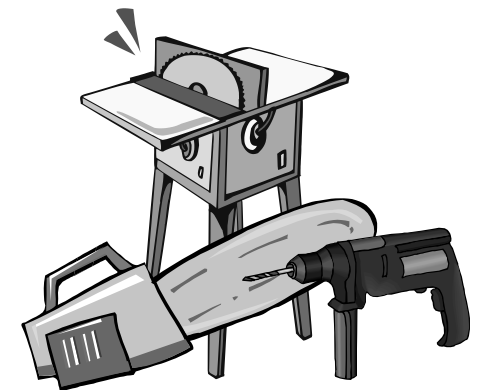
- knives
- hammers
- shovels, axes
- screwdrivers
- brooms and mops
- wrenches

Before you use any machinery be sure that you have been trained, know how to use it safely and have been **authorized** to use it by your employer. If you are tired or under the influence of drugs or alcohol, (which is against the law) you increase the chance that you will have an incident.

Guards

A very important part of many machines is the guard. Guards are used to protect the operator and nearby people from mechanical equipment. They are found on large machinery as well as hand-held equipment. The function of guards varies from one piece of machinery to another. Some of the functions of guards include:

- protecting you from the moving parts of equipment;
- preventing flying objects, such as chips, from hitting you;
- turning off power to machinery;
- lowering the amount of noise;
- physically pushing hands out of the way; and
- two-handed controls that require both hands to operate controls before the machine will work.



In order for **guards** to protect you they must be used and kept in place. Sometimes more experienced workers will tell new employees that safety guards are for “wimps”. Often workers try to take short cuts and not put the guards in place. The few seconds it takes to use the guard will save hours of pain and frustration if an incident occurs because a guard was not used.

Lock Out

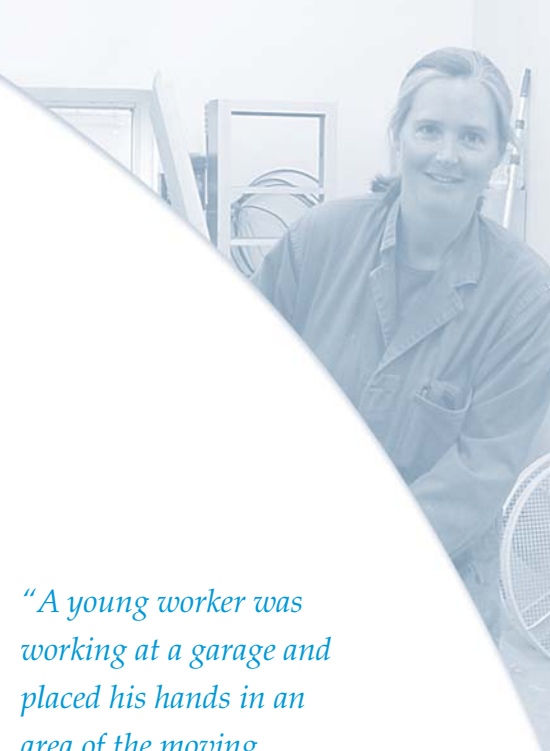
Lock out means that after you cut off the power supply to machinery, you take steps to make sure that the machinery cannot be turned on by someone else. This is important. If, while you are cleaning or repairing the machine, it is accidentally turned on you will probably have a serious injury.

When locking out equipment, you must keep in mind that many machines have more than one type of power source. The power may be electrical, standby electrical (back-up), stored energy (hydraulic, batteries and springs) or manual. All sources of power must be shut off before repairs or cleaning can take place safely. Locks are placed on all parts of the equipment that control the supply of energy. These include electrical breakers and switches, fuel supply lines and liquids.

The steps required for ensuring a safe **lock out** of equipment vary from one company to another, and from one machine to another. Make sure that you are trained and observe the lock out procedures at your work site. If you are unsure, then do not do it. Ask the supervisor for further training or help. If you lock out a piece of equipment, then only you should remove the lock. This means that if a co-worker locks out a piece of equipment, then only that co-worker should remove the lock and start the equipment.

Tag Out

Tag out or tagging the machinery that is out of service or being repaired is another preventative measure used along with the lock out. These tags may read “DANGER” or “OUT OF SERVICE”. Do not touch the machinery and **DO NOT REMOVE THE TAGS** unless you have placed them on the machinery yourself and follow the proper procedures for restarting the equipment.



“A young worker was working at a garage and placed his hands in an area of the moving equipment. He lost the tips of his fingers.”

“A 19-year-old worker was killed when he was pulled through the moving parts of the conveyor belt of a rock crusher. The equipment had been started while the young worker was doing regular repairs on the equipment.”



Pay attention at all times when you are near equipment, including vehicles.



Quick Quiz #18

True or False

1. Machines that are not powered by electricity have less potential to harm the user.
2. The more you are exposed to mechanical equipment on your job, the greater the number of hazards.
3. A screwdriver and a chainsaw are both examples of non-powered hand tools.
4. A two-handed control is an example of a "guard".
5. Cutting off the power supply to machinery is an example of a "tag out".

Answers:

1F 2T 3F 4T 5F

Personal Protection

When working, it may be necessary to wear personal protective equipment (PPE). The type of PPE used will vary to suit the work site. It may include safety glasses, head or body protection, foot protection, gloves and/or arm guards. After receiving your training to work, use the PPE supplied and follow the instructions of the supervisor.

When working near machinery with moving parts, do not wear jewellery or loose clothing, and tie back long hair. Once caught in the moving parts, you can be dragged in. Protect yourself against the possibility of fire by wearing cotton clothing. Cotton clothing is less likely to burn than synthetic clothing.



Portable Power Tools

Power tools require a source of energy. This energy source may be a fuel or electricity. These tools are mobile and require you to hold them while they are operating. This close contact with the machinery increases the chance of injury. Most handheld power tools are available at the local hardware store and do not require training to operate them. Toes and fingers have been cut off by mishandled chainsaws and electric handsaws. The misuse of portable power tools can lead to permanent **disabilities**. The injuries are often painful and can be fatal.

There are many types of power tools that you can use on the work site and at home. Always be aware that these tools are designed to cut, drill, saw and do work on objects such as wood and metal. Do not let that object be you.

- Follow the manufacturer's directions when it comes to taking care of your tools. Damaged tools, modified tools, and tools that are not in good repair increase the chance of an accident happening.
- Do not make adjustments to the tool when it is turned on or when it has an available power source.
- Use the tool only for the job for which it is intended.

- Electrical tools must be protected from moisture. When you receive a shock there is the possibility of a “double whammy.” First, there is pain and possible burns associated with electrical shock. Secondly, the electrical shock may cause you to lose control of your muscles. When you lose control of your muscles, you lose control of the power tool. The tool can then do its job on you.
- Electric shock occurs when a person becomes part of an electrical circuit. A current flows through the body. A fatal electric shock is called electrocution.
- Keep tools that cut sharp. A sharp tool is less of a hazard than a dull one. Less force is required to use the tool.
- Do not use a power tool near fuel. Sparks can ignite the fuel.
- If there are guards on the tools, use them.
- Always hold the tool firmly. Make sure the object that you are working on is also supported. Clamps, tables, vises, sawhorses or bench clamps may be necessary to make the work safe.
- When working with electrical tools make sure that the cord is in good repair. While you are working ensure that the cords are placed away from the work so that you do not damage them with the tool. Also make sure that the cord is long enough to allow you freedom of movement with the tool.

Protective Equipment


- Do not wear any loose clothing or jewellery that can become caught in the machinery.
- Wear eye protection. This protects you from flying materials such as chips and sparks.
- Gloves protect the hands from burns, splinters, scrapes and cuts.
- Protective footwear can protect the feet from cuts from saws and objects that fall during the work process; e.g. pieces of wood, sparks and tools.
- Protective aprons or clothing can protect the worker from sparks, splinters or metal pieces.
- Respirators protect from breathing hazards.

Non-powered Hand Tools

Although non-powered hand tools are not large pieces of machinery, they are still hazards on the job. Many workers are injured each year from improper use and care of hand tools.

Not only are hand-held tools common on the work site, they are common in the home. Wrenches, screwdrivers, hammers, axes, rakes and knives are common hand-held tools.

- Before you start a job, choose the right tool. Use the tool correctly.
- Make sure that the tool is in good repair.



“A planer operator was adjusting the planer. His body was somehow pulled into a chute. Two pieces of timber followed him into the chute, striking and killing him. There were no witnesses to the accident but investigators concluded that his wristwatch caught on a piece of lumber, causing his body to be pulled into the machinery.”



Pay attention at all times when you are near equipment, including vehicles.

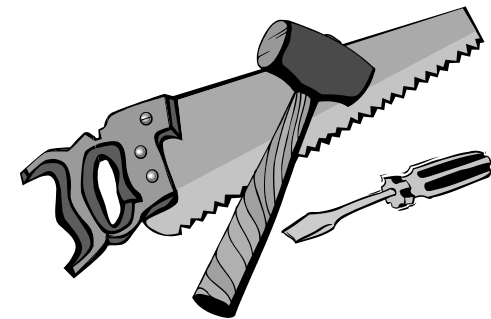


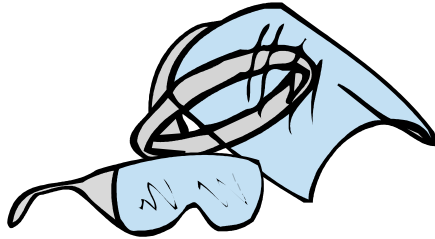
Quick Quiz #19

1. Which of the following is not an example of personal protective equipment?
 - a) sneakers or running shoes
 - b) gloves
 - c) protective aprons
 - d) respirators or breathing masks
2. Which of the following are common non-powered hand tool?
 - a) drills, axes and chainsaws
 - b) saws, hammers and drills
 - c) screwdrivers, hammers, axes
 - d) wrenches, rakes, knives and welding equipment

Answers:
1 A 2 C

- It is important to store tools carefully. Do not leave cutting tools exposed. Close the drawers of tool chests and make sure that toolboxes have the safety catch on so they do not fall open if someone tries to move them.
- Cutting tools should be kept sharp and free from nicks.
- When you are using cutting tools, aim the cut away from yourself and other workers.
- Do not carry tools, especially sharp ones, in anything other than special spots in toolboxes, or tool belts or aprons designed to carry tools.
- Tool handles should be clean and free of grease to lessen the chance of slipping.
- Avoid using excess force while using hand tools.
- You probably know that there are different types of screwdrivers: Phillips, Robertson and flat blade are examples. These different types of screwdrivers come in different sizes. Using the wrong screwdriver could not only damage the screw head but could also skin your knuckles. Don't use a screwdriver as a pry bar or chisel. Never use a screwdriver near a live electrical outlet.
- It is necessary to choose the right size and type of screwdriver for the job, but did you know that there are different types of hammers? Hammers are made in different sizes and weights. Two of the most widely used hammers are the claw hammer, which is used for hitting and removing nails, and the ball peen hammer. Ball peen hammers have a ball shaped part at one end of the hammerhead and a rounded striking face at the other end. Ball peen hammers are used for hitting chisels and punches.





Personal Protective Equipment

Personal protective equipment is mandatory, even when working with non-powered hand tools. Safety glasses and gloves prevent many injuries. Safety glasses prevent flying tools and fragments from hitting your eyes. The type of gloves you choose must suit the job that you are doing. All gloves should fit correctly; if they are too small they cause numbness and if they are too big they can get in the way.

- Metal mesh gloves should be used to prevent cutting injuries. Use them even to cut an onion while working in the kitchen of a fast food restaurant.
- Leather gloves should be used when working with materials that splinter or are rough.
- There are special rubber gloves that can be used to help insulate against electricity.
- Asbestos or aluminum fabric gloves should be used when dealing with extreme temperatures.

“A worker went home after working on a machine that cut metal. One of the hazards of the job was that small, sharp pieces of metal often got caught in his clothing. His small daughter rushed to the door to meet and hug him. A piece of steel came off his shirt and lodged in her eye. She lost her sight permanently in that eye.”

*“Safety equipment is important,
everyone knows!
Finish the job
with ten fingers and toes.”*

For more **INFO** on this lessons topic



Refer to the videos *Hand and Power Tool Safety*, *Protecting Hands from Hazards*, and *High Impact Hand Safety*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

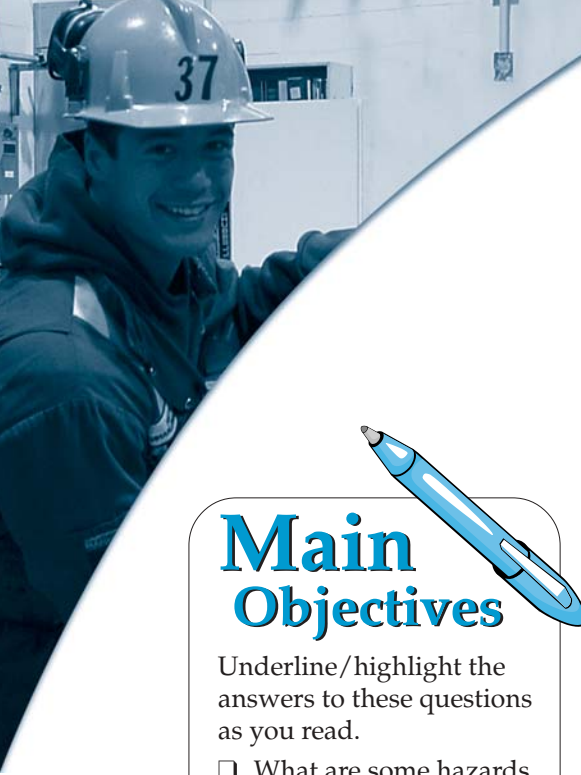
Quick Quiz #19



continued

3. Which statement about protective gloves is accurate?
- a) Mesh metal gloves should be used to prevent cutting injuries.
 - b) Leather gloves should be used when working with electricity.
 - c) Rubber gloves should be used when dealing with extreme temperatures.
 - d) Asbestos or aluminum fabric gloves should be used when working with materials that splinter or are rough.

Answer:
V€



Electrical Safety

– Lesson 11

Main Objectives

Underline/highlight the answers to these questions as you read.

- ❑ What are some hazards associated with electricity?
- ❑ What are some ways to reduce electrical hazards?
- ❑ Identify four examples of personal protective equipment when working with electricity.

Electricity

It is hard to think of any job today that does not involve the use of electricity. Tools used at the work site may require a high voltage, or low voltage. With the use of any type of electricity comes electrical hazards.

There are several hazards associated with electricity. The one that almost every person has experienced is that of electrical shock. Electrical shock occurs when electricity enters your body. You become part of an electrical circuit. The electrical current detours from the intended circuit and flows through you to the ground. Electricity can cause serious injury or death to humans at both low and high voltages. It is the flow of electricity (amperes) not the strength (voltage) that causes injury or death.

Electricity is similar to water in a garden hose. Pressure is required to make the water flow out of the hose. If there is no pressure, no water will flow. At the end of the hose, a nozzle may be added that can turn the hose off. The pressure is still there but the flow is stopped. This is similar to the electrical switches in your school or house. When you turn off the light, the flow of electricity stops but the electrical power is still there. The pressure of the electrical current is measured in volts.

The flow of electricity can be illustrated as follows: There are two water hoses: one water hose can deliver 50 litres of water in one minute and the second, with the same amount of pressure behind it (volts), can deliver 100 litres of water in one minute. The second water hose is obviously more powerful. The flow of water through the hose is called the current. Electricity flows through wires in a similar manner. The amount of electricity flowing through the wires in a period of time is measured in amperes.

60/1000 of an ampere (the amount of flow necessary to light a Christmas tree light) can kill you if it passes through your chest.

An electrical shock can affect your breathing, heart, brain, nerves and muscles. The body has its own electrical system that is involved in breathing, nerve transmission and heart rate. An electrical shock can shut off or “blow the fuses” in your body. When your body’s fuses are blown, the heart can stop beating or you can stop breathing. A fatal shock is called electrocution.

Electrocution is one of the leading causes of death of young workers. Contact with overhead wires is a common cause of electrocution. This can happen when people are carrying ladders, poles or using equipment that is high enough to come into contact with electrical wires.

Always respect electricity as a serious hazard.

Contact with electricity can cause the person to be thrown, causing further injuries. If you are operating a power tool, the shock can affect your nerves and muscles and cause you to lose control of the equipment. The power equipment can then cause serious injury to you or your co-workers.

Grounding

When working with electrical equipment, there may be leakage of the current. If electrical wires or equipment are damaged, parts that are not meant or designed to carry electricity can become “live.” When a person contacts the “live” equipment or wire, he becomes part of the circuit, receiving a shock. Grounding provides a safe pathway for electricity to travel from the equipment or circuit to the ground, preventing shock.

Grounding should be provided for each piece of electrical equipment and machinery on the work site. It should also be provided for the entire electrical system at the site. The third prong in all portable tools and extension cords supplies grounding. Make sure that the equipment you use has one.

When working with equipment:

- Before you plug it in, check to make sure wires are not broken or damaged.
- Never use cords which have had the third prong removed to fit into a two prong outlet.
- Do not use electrical equipment that is damp or handle electrical equipment with damp hands.
- Tags should be attached to damaged electrical equipment.
- Never try to fix the electrical equipment yourself – have a qualified person repair it.
- Remove the plug from the outlet by grasping the plug and not the cord.
- Keep electrical cords out of the way so that they cannot be damaged or tripped over.
- Do not overload outlets.



Quick Quiz #20



True or False

1. When you receive an electric shock, you actually become part of an electrical circuit.
2. Electricity can serious injury or death to humans even at low voltages.
3. An electric shock can affect your heart, nerves and muscles, but not your brain.
4. Electrocution is one of the leading causes of death of young workers.

Answers:

1T 2T 3F 4T



Always respect electricity as a serious hazard.



Quick Quiz #21

1. The third prong on an electrical cord serves what purpose?
 - a) It can be used for locking out the power tool.
 - b) It prevents fuses from blowing.
 - c) It provides grounding, preventing shock.
2. Which personal protective equipment should not be used to help reduce electric shocks?
 - a) rubber soled shoes
 - b) rubber gloves
 - c) non-conductive head equipment
 - d) leather gloves
3. Clothes made of what material are less likely to burn?
 - a) polyester
 - b) synthetic
 - c) cotton

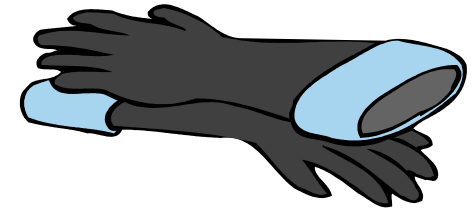
Answers:
C E D C

In all cases:

- Never use water on an electrical fire.
- Be aware of the location of overhead wires.
- do not use a ladder that is made of aluminum or has metal reinforcements.
- Learn and follow lock out procedures when dealing with large pieces of machinery or equipment.
- Study operation manuals for all electrical equipment before using it.
- Do not make repairs on equipment unless you are a certified electrician.



“Two workers were working side by side in the insulated bucket on a line truck belonging to an electrical company. One worker wore cotton and the other had synthetic clothing on. An electrical short, consisting of a ball of fire, hit the bucket. Both workers suffered burns and their clothes caught on fire. The cotton-clad worker was seen and discharged from the hospital the same day. The worker who was wearing synthetic clothing was hospitalized and treated for severe burns. He was not discharged for three months.”



Personal Protective Equipment

Rubber soled shoes, rubber gloves and non-conductive head protection help reduce the effects of shock. Jewellery, if it is metal, will conduct an electrical current to you. It is wiser to leave the jewellery at home. Clothes made of cotton are less likely to burn.

For more INFO
on this lessons topic



Refer to the video *Respect Electricity*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Fire Safety

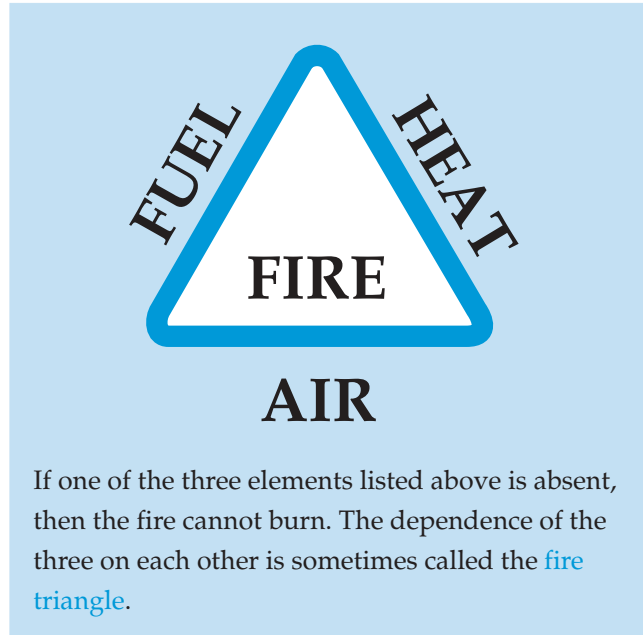
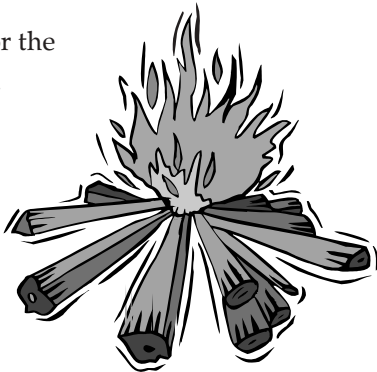
– Lesson 12

Fire on the Work Site

Fire is a hazard that is present on many job sites. Fires can be started many ways. Heating systems, cooking, careless smokers, electricity, appliances, poor housekeeping and the improper storage of chemicals are but a few examples.

There are three things that are required for a fire to burn. They are:

1. **Fuel** – the material which burns. Solids and liquids do not burn; it is their gases or **vapours** that do. Materials such as wood and gasoline are heated to the point where they give off vapours. If enough vapour is present and mixed with air, the mixture can be ignited. A flashpoint is the lowest temperature at which there is enough vapour to form a mixture that can produce a flame.
2. **Heat** – the means by which the fire is ignited. This may be a spark, hot surface, hot air or a chemical reaction.
3. **Air** – necessary for the supply of oxygen.



If one of the three elements listed above is absent, then the fire cannot burn. The dependence of the three on each other is sometimes called the **fire triangle**.

If a fire is spreading quickly beyond where it started, do not try to fight it – call for help. Always be sure that you have your back to a fire escape before you start to fight a fire and only fight a fire if you have been trained to do so and have the proper equipment.

There are different types of fires and different ways to fight them. You should always be aware of the fire extinguisher nearest to your work station and be sure that you know how to use it. There are different types of fire extinguishers for different types of fires. Make

Main Objectives

Underline/highlight the answers to these questions as you read.

- What are the three components of the fire triangle?
- What are the four classes of fires?
- What are the four steps for using a fire extinguisher?
- What can you do if you or a co-worker suddenly catches on fire?



Always know the location of fire escape routes and the procedures to follow in case of fire at your work site. If you do not know these, ask – it's the smart thing to do.

To stop a fire you remove one of the three components of the fire triangle. The triangle collapses and fire cannot occur. To prevent fires, keep the three components of fuel, heat and air from combining.

sure that the fire extinguisher at the work site is suitable for the type of fire that could be expected. If you are working with chemicals, you should be familiar with the Material Safety Data Sheets and have read the section dealing with fire.

Classification of Fires is Done by the Fuel

Class A fires involve ordinary materials like wood, paper, plastic and cloth.

Prevent these types of fires by keeping work area free from litter and place cleaning rags in special covered containers. When working near a source of heat or open flame, ensure that you keep things that can burn well away from the heat source.

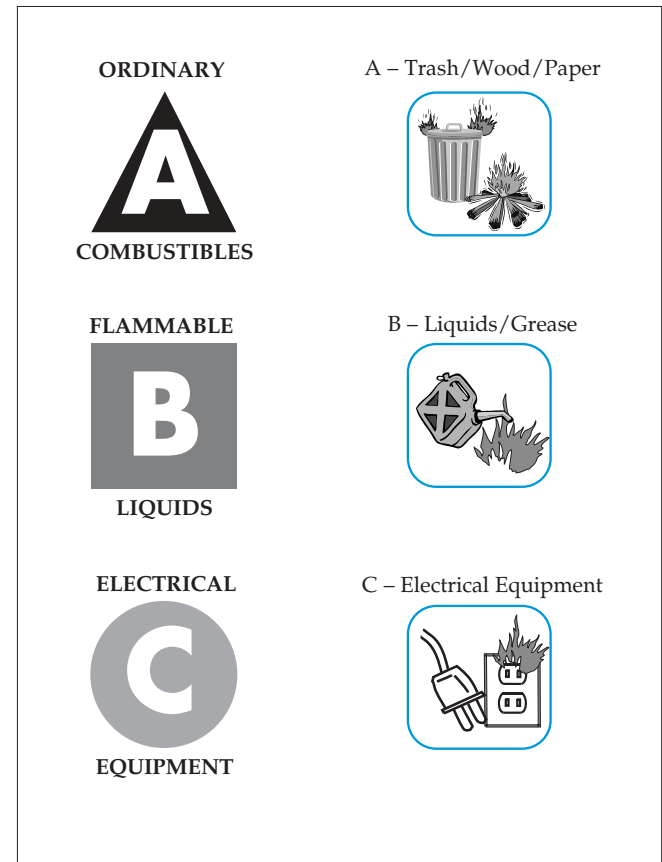
To fight **Class A fires**, the temperature of the material that is burning must be lowered below its flashpoint. Pressurized water or extinguishers that contain foam or a multipurpose dry chemical can be used. **DO NOT USE** a carbon dioxide or ordinary chemical extinguisher on this type of fire.

Class B fires involve flammable or combustible liquids; for example, paint thinners, grease, gasoline, propane, kerosene, fuel oil, paint and lamp oil.

To prevent these types of fires:

- Allow machinery to cool before refueling.
- Do not refuel or pour liquid near an open flame (furnace, barbecue or cigarette).

- Make sure that the areas where the fuels are stored are well-ventilated to prevent the build up of fumes that could be ignited.
- Store fuels away from sources of sparks. The containers that the flammable liquids are stored in should be tightly closed and spill proof.



To fight a **Class B fire**, the fire's source of air or oxygen must be blocked. Foam, carbon dioxide and dry chemical extinguisher may be used.

Class C fires are electrical fires involving electrical equipment, switches, and power tools.

These types of fires are prevented by keeping electrical equipment in good repair. Do not use equipment that has faulty wiring. Do not overload wall outlets and ensure that three prong plugs are used. Uncovered light bulbs that come in contact with combustible material can start fires.

Class C fires should be fought with a fire extinguishing material that does not conduct electricity. Carbon dioxide, ordinary dry chemicals and multipurpose dry chemical extinguishers can be used. Never use water on fires where there is an active source of electricity.

Class D fires involve metals that burn, such as magnesium, potassium and sodium. These metals do not give off oxygen. These metals oxidize very quickly when exposed to air and can react violently with water, breaking water into fuel (hydrogen and oxygen) that oxidizes the metal with explosive force.

To extinguish **Class D fires**, special materials are required. These agents are different for each of the different types of metals. If you work on a work site involving these metals, be sure that you are instructed what to do in case of a fire.

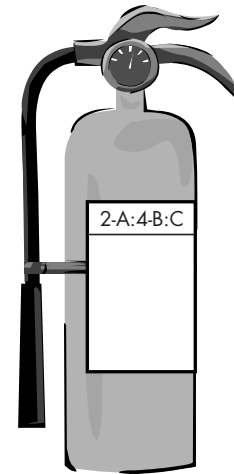
Fire Extinguishers

Fire extinguishers are rated according to the type of fire they are suited to extinguish.

The rating should be on a plate on the extinguisher.

A fire extinguisher with a faceplate that reads: 2-A: 4-B:C would be capable of fighting types A, B and C fires. The numbers on the extinguisher indicate the size of fire that an experienced person can safely put out using it. Class C ratings will not have a number. The class C rating only tells you that the material in the extinguisher will not conduct electricity and can therefore be used for electrical fires.

Class D extinguisher ratings will indicate the type and amount of metal that the extinguisher is effective on.



Quick Quiz #22



True or False

1. To stop a fire, one of the four components of the fire triangle needs to be removed.
2. If fire is spreading quickly, you should try to contain it rather than going for help.
3. There are three basic classes of fire.
4. Class B fires involve ordinary materials like paper, wood, plastic and cloth.
5. Class C fires are electrical in nature involving electrical equipment, switches and power tools.

Answers:

1F 2F 3F 4F 5F



*Always alert emergency response people in the case of fire.
Firefighting is best done by trained professionals.*

In Case of Fire . . .

Once you are certain that you have the correct type of extinguisher for the fire you are fighting, follow these steps:

P Pull the pin.

A Aim the nozzle of the extinguisher at the base of the flame.

S Squeeze the trigger. Make sure that the extinguisher is held upright.

S Sweep the extinguisher back and forth over the fire making sure that all the fire is covered.

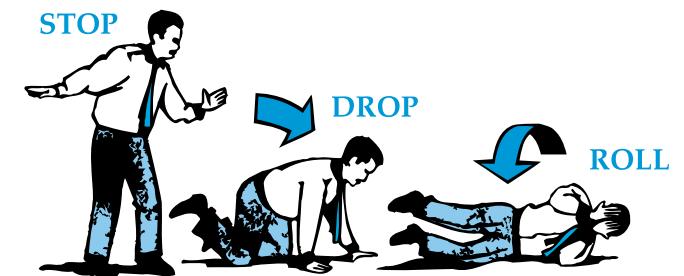
- If your escape route is in danger of being made inaccessible, leave.
- If the fire extinguisher does not put out the fire, leave.
- If you cannot safely fight the fire, leave.
- When you leave a burning room or building, close the door if you are the last one out. This prevents air from reaching the fire.
- Do not use elevators – use the stairs. Stairways should always be kept free of obstacles.
- Stay low to the floor to avoid smoke and toxic gases.
- Try to cover your nose and mouth with a damp cloth.
- Before opening doors, place the back of your hand on them to see if they are hot. If a door is hot, use another exit.

- If you become trapped, seal the cracks around the doors and vents. Look for a telephone, call the fire department and give your exact location. Keep the vents and windows closed but make sure that you can open them, if breathing becomes difficult, to let fresh air in. Lay low.

Stop, Drop, and Roll

If you or a co-worker catch on fire, remember, “Stop, drop, and roll.” Stop what you are doing, drop to the ground, and roll around. This action will help smother the flames and may save your life.

A special fire blanket, a blanket, rug or coat can be used to wrap a person who is on fire. This will prevent the flames from getting air.



*“Don’t let fire take its toll.
Learn to stop, drop and roll.”*

Burns

Major burns should be treated as soon as possible at a hospital. Do not immerse in water or apply ice. Do not remove charred clothing; cover the casualty with a clean dry sheet or sterile dressing, depending on the affected area.

If the burn is minor, immerse the burned area in cold water. This cools the burn area down, possibly preventing further damage. Cover the burned area with sterile dressing.

Shock

Shock often goes hand-in-hand with burns. Shock occurs when the nervous system suffers an upset. The worker is pale, has clammy skin, irregular breathing and may be experiencing a cold sweat.

To treat a person in shock:

1. Keep them lying down. If he is unconscious, place him/her on their side to allow fluids to drain from their mouth and nose. **DO NOT MOVE** the person if you think that there may be an injury to his/her spine or neck, unless it is absolutely necessary.
2. Cover the person to maintain body heat.
3. Get medical help.

Smoke or Gas Inhalation

If a victim of a fire shows symptoms of dizziness, violent coughing, irregular or no breathing and disorientation:

1. Get the victim to fresh air.
2. Lie the victim down.
3. If he/she is not breathing and medical help is not available, give artificial respiration.
4. Call for medical help.



For more **INFO** on this lessons topic



Refer to the video *Remember Charlie*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Quick Quiz #23



1. The best course of action if you or a coworker catches on fire is to:
 - a) run and get a fire extinguisher
 - b) stop, drop and roll
 - c) try to pat the fire out with your hands
2. Major burns should be treated as soon as possible at a hospital. You can also:
 - a) immerse the burn area in water
 - b) apply ice to the burn area
 - c) remove any charred clothing
 - d) cover the casualty with a clean dry sheet or sterile dressing
3. Which is not a sign of "shock"?
 - a) cold sweat
 - b) pale skin colour
 - c) clammy skin
 - d) regular breathing

Answers:
1B 2D 3D



Office Safety

– Lesson 13



Main Objectives

Underline/highlight the answers to these questions as you read.

- What are some examples of office injuries?
- What causes repetitive strain injuries?
- How are tendons, nerves and blood vessels affected by repetitive strain injuries (RSI)?

Office Safety

Many workers do not think that there are **hazards** in an office. This attitude is in itself a hazard. Your classroom is similar to an office. Is it free from hazards? Look around you.

1. Are the aisles free from obstructions such as book bags and backpacks?
2. Is the overhead lighting sufficient?
3. Are the desks organized to allow for easy movement around them?
4. Are there books, pencils, pens, or garbage on the floor?
5. Does anyone have a coat that is hanging from the back of his/her seat? Could this trip a passerby?
6. Are there any electrical cords that may be tripped over?
7. Are there any chairs that need repair?
8. If the floor is carpeted, is the carpet secure?
9. If the floor is not carpeted, have people worn wet shoes in, leaving water on the floor?
10. Are there any unattended, open drawers on filing cabinets or desks? Are filing cabinet features functioning?

Slips, trips, and falls are the leading cause of office injuries.¹

Doesn't this sound familiar? Look around the classroom. How many hazards can you see that could cause a slip, trip or fall?

An office is dangerous because people assume that they are safe working there. There are usually no large, noisy machines, physical labour is minimal and hazardous chemicals are not usually present. However, each year workers receive disabling injuries in the office. Some injuries may develop over a period of time and not be linked with office hazards. In other cases, the injury may be considered minor, so it is ignored and not reported.

When working in an office:

- Know the location of fire escapes and fire extinguishers.
- Have emergency numbers posted so you can find them easily.
- Keep the office free from clutter. Items in aisles, stairways and frequently used pathways can easily be the cause of a slip, trip, or fall.
- Spills, trash, coins, pens, or pencils on the floor can cause you to slip if you step on them. Pick them up.
- Electrical cords should not be in traffic areas. They can cause you to catch your foot and trip. Stepping or rolling items over the cord can cause damage to the cord over a period of time. Shocking!

¹ Preventing Repetitive Strain Injuries – A Training Package; Canadian Centre for Occupational Health and Safety; Hamilton, Ontario.

Practice a safe attitude. Remember accidents do happen in the office.

- Chairs should be stable and solid. Do not rock on them and keep all the legs on the floor at all times. If the chair has wheels, there should be five legs for stability.
- The inside of an office desk can also be a hazard. Tacks, scissors, staples, and other sharp objects may be placed there. To prevent cuts and punctures, store sharp objects in separate sections or boxes. If the objects are very sharp, store in boxes with lids.
- Drawers that are left open can be painful. At all levels, they can gouge and bruise. An open drawer at a lower level can trip you, and cause you to fall. At higher levels, an open drawer can cause the cabinet to tip and fall onto you.
- When closing drawers make sure that your fingers do not get in the way. Use handles. If the drawers are not closing smoothly, get them repaired.
- Make sure that filing cabinets only allow one drawer to be open at a time. If more than one drawer is opened, the cabinet can become unbalanced and fall onto you.
- Fill the bottom drawers of filing cabinets first. Do not put heavier items in the top drawers. This will prevent the cabinet from tipping.
- When stacking objects in shelves, or storage cabinets, store the heavier items on lower shelves. Stack items neatly so that they will not fall. Do not overload shelving or cabinets, especially if they are not secured to a wall or floor; they may tip onto you.



- Everyone has experienced the pain of a paper cut. If you are dealing with large amounts of paper, you can protect your fingers with finger guards and stamps and envelopes can be moistened with a damp sponge.
- Be careful when you are using staples. The staples can end up in you. Keep your fingers away from the place where the staples come out and never aim a stapler at anyone or use it when it's near your eyes. No more staple fights!
- Know how to operate any machinery safely.
- Turn off equipment and unplug it before you adjust or try to repair it. If a piece of machinery becomes too hot, smokes, or sparks, immediately turn it off, unplug it, and report it to your supervisor.

Quick Quiz #24



True or False

1. The attitude that there are no hazards in the office is in itself a hazard.
2. Slips, trips, and cuts are the leading cause of office injuries.

Answers:

1 T 2 F



Practice a safe attitude. Remember accidents do happen in the office.

Quick Quiz #24



continued

3. When working on a computer, you should try to keep your wrists in a straight line with your lower arms.
4. When using a computer, your feet should be flat on the floor or footrest.
5. When using a photocopier, you should avoid direct contact with chemicals

Answers:
15 17 18

- Photocopiers use chemicals. Avoid contact with the chemicals. Wear rubber gloves and protective clothing if in contact with the chemicals.
- Avoid wearing loose clothing, jewellery, and articles of clothing like scarves and belts, when you are working around machinery that has exposed moving parts

Computers

Computers are a common piece of office equipment.

- To avoid eye strain while using computers, make sure there is no glare from the monitor. Change the angle of the screen or adjust window coverings to prevent glare. Adjust the control knobs so that the screen is easy to read.
- Avoid repetitive strain injuries such as Carpel Tunnel Syndrome, shoulder, and neck injuries, by ensuring that your wrists are kept in a straight line with your lower arms. Stop periodically to flex your wrists.
- Use proper posture, keep your back straight, and your feet flat on the floor or footrest. Use a chair that supports your thighs, keeping them parallel to the floor.

Repetitive Strain Injuries

One half of all workers are at risk from developing repetitive strain injuries. Repetitive strain injuries may also be known as musculoskeletal injuries. Repetitive strain injuries (RSI) develop when you repeat the same motions numerous times. **These motions involve the shoulder, neck, hands, wrists, knees, back or elbows.** As this type of injury develops gradually, not in an instant, the damage is not usually noticed until it is serious. RSI is difficult to diagnose because the symptoms vary from one person to another.

In your body there are units of muscles, tendons, nerves and soft tissues that are involved in movement. These units work in pairs. When you bend your arm, one unit bends, and a second unit straightens the arm back out again. While one muscle unit is working, the other is relaxing. If your muscles are constantly worked, with no time for rest, there is a build up of wastes in the muscles. You feel this as sluggishness. Continued use reduces the flow of blood, causing the irritation of the units, injury, and pain.

There are three things that contribute to the development of repetitive strain injuries:

1. **Actions that are repeated** numerous times during the day. Some experts feel that if you repeat the motion every 30 seconds you are at risk. Other

experts feel that if you repeat the motion hundreds of times a day you are at risk.

2. **If force is used in the movement**, you are more at risk. Force is used in the hammering of a nail, and the turning of a screwdriver. The amount of force you have to use, depends upon the tool, and the job.
3. **Awkward body positions** and movements increase the chance of a repetitive strain injury.

You increase your risk of developing RSI, if your job requires you to:

- hold your hands above your shoulders,
- twist your body,
- bend your body,
- hold your elbows away from the body,
- bend your wrists, or
- hold part of your body in the same position for a long period of time.

It is important to diagnose RSI early before damage is done. If you suspect that you may have a repetitive strain injury (taking too many notes during class) it is important to see a physician. RSI may be a result of the job and what you do during leisure time. For example, if you type all day, then deal cards all night, you do not give your arm and hand muscles time to relax.

RSI is often diagnosed as the following:

Tendons

- **Tendonitis:** Tendons are tissue that attach muscles to the bones. Overuse of the tendons may cause fibres to be injured. When the tendon repairs it will be thicker and may have rough surfaces. The rough surfaces can rub causing further inflammation.
- **Bursitis:** A sac filled with fluid surrounds the tendons and bones. This sac acts as lubrication during the movement of muscles and tendons. When the tendons are overused they can become swollen and thickened. In narrow spaces, the larger tendon can rub against the bursa sac. This causes pain, tenderness and limited movement of the joint. Bursitis is common in the shoulder.
- **Tenosynovitis:** The tendons in the hands and wrists have sheaths that cover them. The inner part of the sheaths produce lubrication. If the tendons are overused the sheath may not be able to keep up and the lubrication system fails. This will cause friction between the tendon and sheath in your wrist and hands. Your wrist and hands become swollen and inflamed.

If you continue to do the same movements, scar tissue may form. Other clues that you may be experiencing RSI in your hands and wrists include redness, swelling, pain, discomfort and not being able to have a firm grip on objects.

Quick Quiz #25



1. Which of the following are not affected by repetitive strain injuries (RSIs)?
 - a) shoulders and neck
 - b) wrists and hands
 - c) knees and feet
 - d) back and elbows
 - e) all of the above are affected
2. Which of the following is a true statement?
 - a) If you repeat a motion more than 10 times per day, you are at risk for injury.
 - b) Awkward body positions and movements increase the chance of a repetitive strain injury.
 - c) Using a screwdriver (screws) rather than a hammer (nails) will reduce your risk of injury.
 - d) Taking notes in class will cause repetitive strain injury.

Answers:
1E 2B



Practice a safe attitude. Remember accidents do happen in the office.

Quick Quiz #25 continued



3. What causes Carpel Tunnel Syndrome?
- a) swollen tendons in the shoulder
 - b) swollen muscles
 - c) pressure being put on a nerve in your wrist
 - d) swollen blood vessels in the neck and shoulder area

Answer:
D

Nerves

Nerves send signals between the brain and the body. There is a nerve in your body called the median nerve. The median nerve controls muscles of the hand and serves as a pathway for the sense of touch to be sent to the brain. The median nerve starts in the neck and ends up in the first three fingers of the hand. Inflammation of tendons can affect this nerve.

- **Carpel Tunnel Syndrome:** This is caused by pressure being put on the median nerve where it goes through your wrist. When the tendons become inflamed, thicken and swell due to overuse the median nerve is squeezed. This squeezing causes numbness in the three fingers, and pain.

Blood Vessels

Blood vessels remove wastes and bring oxygen to the muscle groups doing the work. If the muscle, tendon and nerve unit becomes swollen, the blood vessels can be squeezed. This will reduce the amount of blood reaching the muscles.

- **Thoracic Outlet Syndrome:** This occurs when blood vessels and nerves in the neck and shoulders are squeezed. This causes shoulder pain, weakness and numbness in the arms and fingers. This is common in work that requires reaching, as in the

jobs of painters and welders. In untreated, you can lose the sense of touch and feeling for hot and cold. You may end up being unable to do up your buttons or to tie your shoes.

The treatment of repetitive strain injuries involves a combination of medical treatment and changes at the work site. Medical treatments may involve the temporary use of splints, tensor bandages, medicines and application of heat and cold. In extreme cases surgery may be required. At the work site the repetitive strain risks must be reduced or removed.

Change at the work site involves designing the work site to fit the movements of the workers. This is called ergonomics.

For more INFO on this lessons topic



Refer to the videos *Why Should I Care*, and *Office Safety: Its a Jungle in There* (optional), available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Ergonomics

– Lesson 14

Ergonomics¹

Repetitive strain injuries are the leading occupational injury at the workplace. The cost of **RSIs** is high: lost time, millions of dollars a year in claims, and pain experienced by the worker. The pain associated with RSI can cause loss of sleep and change the way a person and his family live. Ordinary tasks such as shaving, using a computer and sweeping may become painful. With attention given to repetitive strain motions in the workplace, the pain and cost may be avoided.

Ergonomics is setting up the work site to meet the needs of the worker. In ergonomics, the worker is the central figure. When work sites are designed to suit the needs of the worker there are fewer cases of repetitive strain injuries, fewer days absent and higher productivity because the worker is in better health. When designing a work site for a worker, five things should be considered:

1. **Workstation Design:** Different workplaces have different products, procedures and services. The workstation design refers to the work area, hand tools, equipment, environmental conditions, and layout that you use to perform your job. The arrangement of the workstation should prevent you from making awkward movements, forceful movements and repetitive movements.

Your work site should fit you; you should not have to adjust to the work site. It should be organized so that you do not have to perform movements that could lead to injury.

Your workstation includes the furniture. The furniture should be adjusted to your body and its motions. Look around your classroom. A desk in the classroom is your workstation. Are the workstations adjustable to your body? A good workstation allows for adjustments to suit your needs. You know a workstation is a poor one when you notice the following:

- no chair, or the chair is pushed aside;
- books or boxes are used to raise work materials, or as foot rests;
- people have to twist, bend or lean all the time;
- cramped body positions;
- holding the body in the same position for a long time; and
- no adjustments allowed for people of different sizes.



Main Objectives

Underline/highlight the answers to these questions as you read.

- What five things should you keep in mind when designing a workstation?
- What three things can you do to reduce the risk of repetitive strain injuries?

¹ Musculoskeletal Injuris Prevention Program; Workplace Health and Safety Agency; 121 Bloor Street East; Suite 900, Toronto, Ontario.

Preventing Repetitive Strain Injuries – a Training Package; Canadian Centre for Occupational Health and Safety; 250 Main Street East, Hamilton, Ontario.



Ergonomics is setting up the work site to meet the needs of the worker.



Quick Quiz #26

True or False

1. Repetitive strain injuries are the leading occupational injury in the workplace.
2. The pain associated with RSI can cause loss of sleep and change the way a person and his/her family live.
3. Ergonomics is setting up the work site to meet the needs of the employer.
4. Better ergonomics results in higher productivity because the worker is in better health.
5. Your work site should fit you. You should not have to adjust to the work site.

Answers:

1S 1F 3C 1T 1I

2. **Equipment and Tools:** The equipment and tools a person uses to perform work must be chosen, designed, used, and maintained so that he/she can work comfortably and safely. The tools should fit the worker and the job. A hammer that suits you may not be suitable for another worker. Replacing manual tools with power tools whenever possible reduces the force required by the user.

If hand tools are not designed or used properly it will cause you to:

- use awkward movements,
- use more force or strain,
- bend your wrists,
- twist your elbows,
- hold your elbows away from your sides, and
- have difficulty controlling the tools.

Well designed tools allow the worker to use his/her wrists in a straight line from the arm through to the hand. The tools are easy to hold and fit your hands. In cold weather, metal tools should have insulated handles to reduce the transfer of cold from the metal tool to the hands. Smooth or slippery handles require more force to grip them.

Tools that vibrate or kick-back cause you to grip with more force. This makes you tire easily. Tools that vibrate or kick-back should have insulating material

to dampen or decrease these effects. Tools and machines that are not kept in good repair have increased noise and vibration.

3. **Manual Handling:** **Manual handling** on any job must be kept to a minimum. If mechanical aids can be used, they should be. These aids are designed to lessen the risk to the worker. If manual handling is required, the less there is, the better.
4. **Environmental Conditions:** Environmental conditions affect you as you work. Temperature, lighting, noise, and vibration levels, all affect your productivity and health.



- Lighting can create glare or shadows, causing you to move into awkward positions in order to see.
- The temperature affects your muscles. Heat makes you tire easily and produce sweat. Sweat makes it hard to hold tools, requiring more force. Cold can make your hands numb, making it hard to grip and requiring more force. Working in snow or on ice can affect you over both the short and long term.
- Vibration of equipment causes circulation changes resulting in numbness and forceful grips.
- Noise not only can result in hearing loss but causes the body to tense causing an awkward body position.



5. **Work Organization:** This refers to what jobs we do, how we do them, how fast we do them and how long we do them. Jobs that require few tasks and many repetitive body movements will likely lead to Repetitive Strain Injuries. Incentives or quotas that encourage a fast work rate will have a greater chance of RSI.

The risk of RSI can be reduced by paying attention to work organization and by:

- taking frequent short breaks to give time for the body to relax,
- rotating the worker from one work place to another. This allows more variation in body movements and prevents muscle fatigue and boredom, and
- giving workers time to adjust to the pace of work when they start a new job or when they return from a leave.

Quick Quiz #27



1. Which of the following environmental conditions affect your productivity and health?
 - a) lighting
 - b) the temperature
 - c) vibration of equipment
 - d) noise
 - e) animals
 - f) they are all factors
2. Which statement is the most accurate?
 - a) Tools that vibrate or kick-back generally cause you to hold them loosely.
 - b) Furniture should adjust to your body and its motions.
 - c) Well designed tools allow workers to use their wrists at a 90 degree angle from the arm through to the hand.
 - d) Jobs that require many repetitive tasks and body movements will likely lead to less repetitive strain injuries.

Answers:
1F 2B



Ergonomics is setting up the work site to meet the needs of the worker.

Quick Quiz #27 continued



3. You can reduce RSI by:
- taking fewer but longer breaks to allow for recovery time
 - staying with the same job so that your body adjusts to it over time
 - giving workers time to adjust to the pace of work when they start a new job or when they return from a leave

Answer:
CE

Exploring Ergonomics Activity

Repetitive strain injuries are difficult to diagnose because they develop gradually over time.

Companies or groups that are concerned about RSI in the worksite often will use questionnaires to determine if the worker is at risk.

Complete the following survey. If you do not have a job use your classroom as a job site and your work as a student as your job.

- What is your present job?
- How long have you been doing this job?
- Does the job require you to repeat the same motions often?
- Have you had pain that cannot be explained, in your neck, shoulders, elbows, knees, feet, back, hands, or wrists, that has lasted for longer than a couple of days?
- Is your workstation cramped?
- Do you have to twist and reach often while working?
- Is your workstation adjustable to your body?
- Do you bend your wrists when you use tools on the job?
- Are your hand tools heavy and hard to handle?
- Is the temperature of your workspace comfortable? If not, what is wrong with it?

- Is there too much noise in the workplace?
- Do you do many different types of tasks during your time on the job?
- How many times in a minute do you repeat a task?
- Do you do a lot of overtime work?
- Have you been trained to operate the tools you use?

Review your answers and use your knowledge of RSI. Are you at risk of developing RSI?

Design a work site for your job that would help prevent RSI.

For more INFO on this lessons topic



Refer to the videos *Why Should I Care*, *Office Ergonomics*, and *Ergonomics: Watch Your Back*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Kitchen Safety and Hand Injuries

– Lesson 15

Kitchen Safety

If you work in a restaurant, fast food business or even do work in the kitchen at home, you should be knowledgeable about kitchen safety.

There are three important steps when it comes to kitchen safety:

1. Be aware of potential hazards.
 2. Follow safe procedures.
 3. Use protective equipment when necessary.
- Since you are working with food, it is important that your hands be clean. You should wash your hands and forearms with soap and water before you start work. Washing should also take place after you use washroom facilities, blow your nose or come into contact with surfaces that may contain germs; for example, garbage cans, used plates and food items such as uncooked meat.
 - Your hair should be short or contained in hair netting. This prevents it from falling into food and being caught in machinery.
 - Jewellery should be removed as it conducts heat, may get caught in moving equipment, and serves as a hiding place for germs.



- In a kitchen there are different types of gloves that can protect your hands: rubber gloves to protect you from chemicals, insulated gloves to protect you from heat, and metal mesh gloves to protect you from cutting yourself when using sharp knives.
- Footwear used in the kitchen should be non slip and should cover and protect your feet from spills that may be hot.
- Safety glasses, gloves and clothing should be used when cooking some items. Place lids on pots to prevent grease and steam from escaping.

Hazards in the kitchen include lifting, heat, electricity, sharp objects, flammable substances, slip, trip and fall hazards, and poor housekeeping. Always be on the look out for these.

Knives

- There are a number of different types of knives. Be sure you use the proper knife for the job. Knives should be kept sharp and free from nicks. Handles should be changed often to ensure that they are not loose, cracked or damaged by heat or water.
- Always cut away from you. To clean the knife, direct the edge away from you and wipe with the cloth on the back of the knife.



Main Objectives

Underline/highlight the answers to these questions as you read.

- What are the three important steps to kitchen safety?
- How does what you wear relate to kitchen safety?
- What is the proper technique for using a knife?
- Name five hazards associated with “heat” in the kitchen.



There are three important steps when it comes to kitchen safety.

“A young worker got a summer job in a Northern restaurant. While preparing for the lunch time rush, she noticed that the grease in the deep fat fryer appeared dirty and decided to change it before the customers came in. She grabbed a plastic bucket. When the grease was put in the bucket, it melted a hole. Some of the grease fell to the floor and the young worker slipped in it. Some of the grease from the fryer she was holding landed on her. She received burns to 20% of her body. As a result of her injuries she was unable to continue working.”

- If you are using machines to cut, make sure you are trained. Never leave the machine running and make sure the guard is in place before you begin.

Heat

- In the kitchen there are many hazards that involve heat. Grills, ovens, stoves, deep fat fryers and other appliances are used to cook food. These can cause serious burns if not respected. Be sure that you are trained how to use and clean these appliances carefully.
- Never use a damp cloth to grab a hot item. The moisture in the cloth can be turned into steam which will burn.
- Use insulated mitts or gloves to grab hot items.
- Handles of pots and pans should never be left over heat. Someone may grab them and burn himself/herself. Also, the heat will damage and weaken some handles, allowing them to break at a bad time.
- Do not leave a handle hanging over the edge of a counter or stove. It can be bumped in passing and the contents of the pot emptied on the worker.
- When opening an oven door, use it as a shield from the heat and steam that comes out.
- Allow a hot item to cool before attempting to clean it. If you place a hot item in water you may be burned by steam.

- Never put electrical appliances in water. Follow the manufacturer’s directions for cleaning.
- Never leave hot items like plates or pans, unattended. Another worker might grab the item and burn himself/herself.

Fire

- Know where the safety escapes, fire extinguishers and fire alarms are located.
- Never smoke near flammable substances.

Housecleaning

- In a kitchen it is important to keep floors clean from cooking oil, fat and other liquids, that may cause you to slip. If floors are wet, put up signs to warn people.
- Never leave items where they may cause a person to trip.
- Always clear countertops of unnecessary objects. Do not allow them to pile up and fall. Place objects well back from the edges so that they cannot be bumped off.
- Always clean up broken items immediately.



Lifting

- Follow safe lifting and **manual handling** techniques. Never lift beyond your ability. This includes carrying too many dishes.
- Ask your supervisor about the safety procedures at your work site, and follow them.
- In some restaurants there are different doors for entering and leaving the kitchen area; use the proper one. Doors should have windows to allow you to see if there is anyone on the other side. Check before you go through.
- There may be a special container for sharp objects and special racks for glasses that require cleaning; using them will prevent cuts.

Hand Injuries

We use our hands in almost every task we perform. Since we use our hands so much we always place them at risk of being injured temporarily or permanently. There are three ways by which your hands can be injured.

1. Catching your hands and fingers between two objects, e.g. in moving machinery, when closing drawers of filing cabinets or when placing a heavy object down. This is the most common type of finger injury on the job.

A common incident involving jewellery, particularly rings, occurs when someone jumps down to a lower level. If the ring gets caught, the person lands at the lower level, while his finger and ring remain at the higher level.

2. Struck by an object, e.g. hitting your finger with a hammer or something dropping on your hand.

“While splitting ore at a mining camp in the North, a young worker’s mallet slipped and struck his hand. He suffered a fracture and chipped bone in his hand.”

3. Contact with an object or substance, e.g. chemicals or sharp objects.

Hand injuries can be prevented by a safe attitude, using proper tools, the use of protective equipment, and following safe work procedures.

There are four types of gloves that can be used to protect your hands from injury:

- chemical-resistant gloves,
- gloves that guard against contamination, such as those used in medical labs,
- special purpose gloves: heat-resistant metal mesh gloves for use when cutting, and
- general purpose gloves: leather gloves for protection from cuts and abrasions.

The glove that you are using should suit the task you are performing.

Quick Quiz #28



True or False

1. You should wash your hands and forearms with soap before you start work in a kitchen.
2. Washing of hands is not necessary each time you blow your nose or after you use the washroom.
3. It is okay to wear small jewellery items when working in the kitchen.
4. To clean a knife, direct the edge towards you and wipe with cloth on the non sharp edge of the blade.
5. A damp cloth can be used as a good substitute for a pot holder.

Answers:

1T 2F 3F 4F 5F



There are three important steps when it comes to kitchen safety.



Quick Quiz #29

1. Before you perform any work you should:
 - a) think about the tasks you are going to perform
 - b) gather as many power tools as possible which will make the job easier
 - c) ensure your clothing is loose-fitting and comfortable
2. You can prevent hand injuries by:
 - a) using readily available tools rather than your hands
 - b) following safe work procedures and using protective equipment
 - c) only wearing small items of jewellery on the work site
 - d) all of the above

Answers:
1A 2B

Safe Work Practices

1. **When using tools, be sure that the tool you are using is the correct one for the job.** The tool should be the correct size and fit. Never use a tool to do something for which it was not intended.

Knives are common tools that are used just about every day. When you use a knife, make sure that the knife is sharp. Always cut away from yourself and always store knives separately. Never use a knife for anything other than cutting. Jackknives can be dangerous as they have a hinged blade that can close on your fingers or hands if they are used incorrectly. Use knives with caution – many people have scars from not doing so.

2. **When operating machinery always make sure that you follow instructions and ensure that guards are in place.** You should avoid wearing jewellery or loose clothing that may get caught in machinery, causing you to be drawn into the moving parts. Follow all safety procedures that are used by your company, and never operate machinery unless you are trained to do so. Many injuries to hands happen because people don't follow the rules.

3. **Never distract a worker when he/she is performing a task that requires machinery.** Always pay attention to what you are doing when you are using machinery. Remember, machinery is designed to perform work **for** you. Do not let the machine work **on** you.

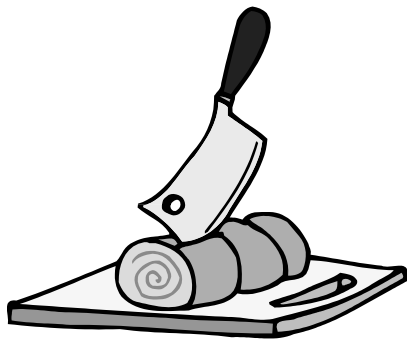
A good worker uses his/her head – to think. Before you perform any work, think about the task you are going to perform. Are there any risks? How can you prevent these risks? Any job requires planning and skill. The better you are at these, the better you are at doing your job. Planning involves avoiding and managing hazards. Skill involves doing your job efficiently and safely so that time is not lost to injuries.



On the job site, make it a habit to always inspect hand tools and machinery before you use them. A few seconds spent on the inspection may prevent a lifetime with a permanent disability. Applying unnecessary pressure when using hand tools increases the chance of injury. The tool may slip and injure you. One moment in time can result in a permanent disability. Never take chances. If you are uncertain of hazards or do not know how to perform a task safely – **ASK. It's the smart thing to do!**

Something to Think About ...

Think of 10 activities that you have done in class that require the use of hands and fingers. How would you perform them if you did not have the full use of your hands and fingers? Use bandages to immobilize one thumb, both thumbs, the forefinger, all fingers, or the whole hand. Try performing some of the activities you identified but be sure to be CAREFUL.



"A young man was working with his family on the trapline. He was told to remove the limbs from a tree so that it could be used to make a tent pole. While working with the axe he accidentally made a deep cut in his hand. The family had to return to town for medical help."

(Note: In the Northwest Territories or Nunavut, an individual who works as a trapper may qualify for compensation for the time that he cannot work on the trapline.)

For more **INFO** on this lessons topic



Refer to the videos *Kitchen Safety* and *Hand Safety*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

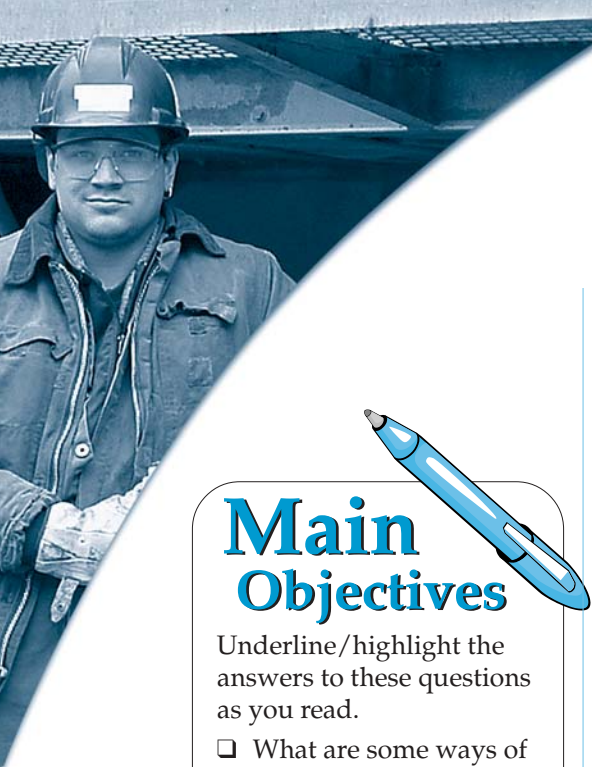
Quick Quiz #29



continued

3. If you are uncertain of the hazards, you should:
 - a) proceed slowly
 - b) try not to get too anxious about it
 - c) ASK – it's the smart thing to do!

Answer:
CE



Environment

– Lesson 16

Your work environment is where you do your job. This could be indoors or outdoors.

Slipping, Tripping and Falls

Incidents that are the result of slips, trips or falls account for a great number of time loss injuries in the Northwest Territories and Nunavut. Falls include those that occur from different heights or the same level.

With safe work practices, good housekeeping and precaution, most of these injuries could be prevented.

Slips

When you slip or slide suddenly you can be injured. Muscles, ligaments, tendons and bones can be damaged when you slip. There are many conditions which can cause a person to slip.

“A young worker worked at a mining site. While carrying samples into a lake to be washed, he slipped and fell, bruising and injuring his shoulder. As a result of his incident, he had to leave the camp and return home for medical help.”

While at the work site it is important to clean up after yourself and make sure that things such as rags, water, ice, grease and loose flooring are disposed of properly. Good housekeeping prevents injuries from happening to you and your co-workers. Good lighting allows for hazards to be seen.

Main Objectives

Underline/highlight the answers to these questions as you read.

- What are some ways of preventing slips, trips and falls?
- What is hypothermia and what three factors contribute to it?
- What causes heat stress and how can you prevent it?

Trips

Unnecessary clutter or obstacles can catch a person's foot and cause him/her to trip.

- In the office, furniture should be arranged so that there is easy movement through the workspace.
- Items should not be stored in aisles, on stairs, in hallways or areas where many people pass through.
- Desk drawers and filing cabinets, when left open, are another cause of trips and falls. Keep them closed even when you think it will be unlikely someone will bump into them.
- Electrical cords are present in every workplace. Try to keep all cords away from walking areas. If this is unavoidable, ensure that the cords are secured to the floor by duct tape or another means so that people cannot slip or catch their feet on them.
- Pant legs and poor shoes can also trip someone. Workers may get their feet caught in the pant leg of pants that are too long or baggy. Shoes that fit loosely, have high heels, open toes or slippery soles are more likely to be the cause of a tripping accident. Make sure your shoes fit well, have low heels, and no-skid soles.

Again, good housekeeping, appropriate clothing, proper lighting and care will help to prevent injuries at work. If something is in the way, have it moved or picked up; a few minutes of prevention may save hours of lost time from the workplace.

Unnecessary clutter can be a hazard.

Condition	Prevention
<ul style="list-style-type: none"> Ice, wet spots, grease and polished floors are highly slippery surfaces. 	<ul style="list-style-type: none"> Wet spots should be cleaned up and if they cover a large area, warning signs should be posted. Grease should be cleaned with rags and detergent. In extreme cases of grease spillage, sawdust can be put down to absorb it.
<ul style="list-style-type: none"> Carpets which are not rubberized on the bottom or not firmly attached to the floor may move when stepped upon. The same thing can happen when parts of the flooring become loose. For example, a tile that comes up or a piece of ramp that shifts. If a person steps on part of the loose flooring, he/she can slip. 	<ul style="list-style-type: none"> Repair and maintenance can prevent this.
<ul style="list-style-type: none"> Slippery surfaces that cannot be avoided. 	<ul style="list-style-type: none"> Walk carefully and slowly. Signs can be posted.



Falls

Slips and trips can end in falls, but falls can occur on their own. When lifting or carrying items, make sure that you do not stack them too high. Be sure that you can see where you are going and that the load will not cause you to lose your balance.

How often has the teacher told you to “keep all four legs of your chair on the floor?” Falls and injuries result from failure to follow that simple rule.

One of the more common causes of falls are makeshift stacks of furniture or boxes used in place of a step-ladder. Know how to use a ladder properly and safely.

Slips, Trips and Falls on Worksite

Slippery and uneven floors in the workplace can result in far more serious accidents than simply slipping or tripping and falling over. In food preparation areas, burns occur during slips, trips and falls when pots of hot liquid are pulled or knocked over.

Quick Quiz #30



Multiple Choice

- Slips can be caused by which of the following conditions:
 - loose flooring or carpets which are not rubberized on the bottom
 - electrical cords not secured to floor (by duct tape)
 - unnecessary clutter or obstacles catching your foot
 - all of the above

True or False

- One of the most common causes of falls are makeshift stacks of furniture or boxes that are used in place of a step ladder.

Answers:
1Z 1I



Unnecessary clutter can be a hazard.

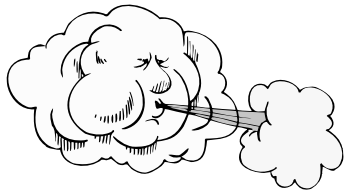
Quick Quiz #30



continued

3. You can prevent slips, trips and falls by:
- recognizing a potential accident situation and correcting it
 - doing things in a safe way even if it takes longer
 - using proper equipment to do the job
 - all of the above

Answers:
CE



“Most hypothermia occurs at air temperatures between -1° and 10° C.”

When working on a construction site, it is important to ensure that scaffolding is constructed safely. When working on roofs, edges should be guarded and you should not stand or walk on a roof that is made of brittle or fragile materials – you may fall through it. When working high above the ground, personal protective equipment should be worn.

Prevention of Slips, Trips and Falls

You can prevent slips, trips and falls by:

- recognizing a potential accident situation when you see it, and correcting it,
- being aware of your abilities and limitations,
- doing things a safe way, even if it takes longer,
- fixing or removing hazards to or avoid potential accidents, and
- using the proper equipment to do the job.

Hypothermia and Heat Stress

You may work on a job site where you are required to work in hot or cold conditions. Exposure to these conditions can reduce your work capacity and efficiency. If these conditions are not recognized and treated they can lead to death.

Hypothermia

Hypothermia occurs when the body core cools below its normal temperature of 37° Celsius. Death usually results when the body core temperature drops below 27° Celsius. Hypothermia can be mild or severe.

If you experience mild hypothermia you will start to shiver and become tired. In severe hypothermia you will have difficulty talking and doing activities that require thinking and coordination. Your behaviour can become irrational. People who are lost and experiencing hypothermia, have been known to cross over a road and go back into the bush. As the hypothermia progresses, the muscles will stiffen and you will lose consciousness. The final stage before death is the absence of reflexes. Death occurs when the body temperature is low enough to cause failure of the heart and breathing.

On the land, three conditions contribute to hypothermia:

1. cold
2. moisture
3. wind

Most cases of hypothermia result from moist and windy conditions, not those of extreme cold.

Moisture

When a person becomes damp or wet there is a layer of water on the surface of the skin. Heat is transferred from the body to that layer of water. The water layer then

evaporates, causing heat to be lost from the body. This causes the body temperature to cool.

Wind

The body heats a layer of air around it. Windy conditions will cause the layer to be removed, causing the body to heat a new layer which in turn will be removed. Eventually, the body cannot keep up with the loss of heat and begins to cool down.

Cold

When the temperature is cold, the body will lose heat to the surrounding air. When you drink a cup of hot chocolate that is too hot you can add milk to cool it down. When you mix the two, the hot chocolate will lose heat to the colder milk. The same happens when the body is exposed to cold air. The body will lose heat to the colder air around it. The colder the air, the more heat will be lost.

Prevention

To prevent **hypothermia**, you must stop the means by which heat is lost from the body. Prevent the body from losing heat due to **moisture** by:

- wearing rain gear or waterproof outerwear,
- carrying a change of clothing stored in a waterproof bag,

- wearing wool clothing – wool will keep you warm even when wet, and
- making a waterproof shelter for protection.

Prevent the body from losing heat due to **wind** by:

- covering as much of the body as possible with suitable windproof clothing, and
- building a shelter if necessary.

Prevent the body from losing heat due to **cold** conditions by dressing warmly for cold weather. Use **layers of clothing** and cover areas of high heat loss, such as the neck and head.

The **first layer** of clothing should cover the core areas of the body. Only the head, neck, hands and feet are not covered by the first clothing layer.

The **second layer** of clothing should include:

- garments with an adjustable open neck to prevent perspiration and allow for control of body heat,
- a belt, drawstring or elastic waist to prevent cold air from reaching the back and chest area,
- pants that are not tight fitting, and
- wool socks.

“Never ignore shivering if it is persistent or uncontrollable. It is a warning you are on the verge of hypothermia.”



Quick Quiz #31



True or False

1. Hypothermia occurs when your body cools more than 10 degrees below its normal temperature of 37° Celsius.
2. With mild hypothermia, you will start to shiver and become tired.
3. In severe hypothermia, you may start to do “weird” things – e.g. become irrational.
4. Hypothermia can lead to failure of the heart and lungs, causing death.
5. Moisture, cold and wind all contribute to hypothermia.

Answers:
1F 2T 3T 4T 5T



Hypothermia can occur in the summer when the land isn't frozen.



Quick Quiz #32

1. You can prevent the body from losing heat due to moisture by:
 - a) building a shelter if necessary
 - b) wearing wool clothing
 - c) using layers of clothing
2. When using layers of clothing, the second layer should:
 - a) include an open neck to prevent perspiration and allow for control of body heat by making the opening larger or smaller
 - b) include a toque and a warm hat
 - c) cover the core areas of the body
 - d) include a parka and insulated pants

Answers:
1 B 2 B

The **third layer** includes:

- a toque or warm hat to prevent heat loss,
- mitts, and
- a second pair of wool socks.

The **fourth layer** includes:

- a parka with drawstrings around the waist, neck and/or hood,
- insulated pants for conditions of extreme cold, and
- high, lined boots.

In Cold Water

If your work site is near or on the water you should always wear a personal flotation device. Some devices are developed to be worn and not interfere with movement while working. A personal flotation device will keep you afloat if you are injured or unconscious. It will also help to conserve body heat. You will not have to waste energy trying to stay afloat.

If you end up in cold water you will find that your body will lose heat much faster than when exposed to cold air.

- Do not remove your clothing. It will keep a layer of warmer water near to the body. Only remove clothing if it is too heavy and dragging you down.
- Try to keep as much of your body out of the water as possible. This may mean pulling yourself up on wreckage or the overturned boat. If more than one of you are in the water, huddle together to

conserve heat. If you are alone in the water, draw your knees close to your chest to conserve heat.

- Get onto the land as soon as possible and then follow the rules for treatment for hypothermia.

If you or a companion are showing signs of **hypothermia**:

- Find or make shelter to protect you from wind, cold or rain.
- Try to get and stay dry.
- Make a fire.
- Cover the ground with waterproof material, then an insulating layer, before sitting or lying down. Cover the body with blankets or sleeping bags. Try to prevent moisture from reaching the insulating materials.
- Place warm objects near your head, neck, and chest. Rocks can be heated and wrapped, clothing or water bottles can be used. Your own body heat can be used to heat another person.
- If the victim is conscious, feed him/her warm liquids and high energy foods.
- Get medical help.

Heat Stress

Heat stress does not only happen in hot climates. You can suffer heat stress from working in hot workplaces like a kitchen or boiler room. If you wear heavy equipment that does not allow for air movement you may also experience heat stress.

Heat stress reduces your ability to do work. You become tired, irritable and may get cramps in your muscles. If heat stress is not recognized and treated, it may lead to heat stroke.

You experience heat stroke when the body stops perspiring and the temperature is high. The skin will be hot and dry to the touch; confusion and loss of consciousness may occur.

To reduce your chances of experiencing **heat stress** at work, make sure that the ventilation at your workstation is good. Opening the door or window will allow a supply of fresh cool air. Fans and vents can be installed.

If you are in a work situation where you do lots of physical activity or it is warm, make sure that you drink lots of water and juices. This will replace fluids you use when perspiring. If you are wearing protective equipment, take breaks in cool areas where you can remove the equipment and cool down.

If you become overheated, take steps to cool the body down by increasing the air movement around you. Soaking your clothes with cool water or showering in cool water will reduce the body temperature.

Other Environmental Factors

Other environmental factors can include wildlife such as bears and wolverines. Wildlife in your workplace can affect both your productivity and your health.

Treat wildlife with respect. Remember that you are in the animal's territory, not the other way around.

While You are Travelling...

- always be alert;
- travel in groups;
- travel only during daylight;
- avoid carrying strong smelling foods;
- make noise where visibility is limited;
- avoid animal feeding areas such as flood plains, berry patches and other grasses;
- avoid wildlife travel areas like shore lines, trails along the water or near berry patches; and
- consider carrying a firearm or other deterrents.

For more **INFO** on this lessons topic



Refer to the videos *Hypothermia: Outdoor Enemy* and *Working in Bear Country*, available from:

Workers' Compensation Board
Resource Centre Library
P.O. Box 8888, Yellowknife NT X1A 2R3
Or phone toll free 1-800-661-0792
Or fax requests to 1-867-873-0262

Quick Quiz #32



continued

3. If you end up in water, will your body lose heat faster or slower than on land?
 - a) faster
 - b) slower
 - c) at the same rate
4. If heat stress is not monitored, it may:
 - a) make you tired
 - b) make you irritable
 - c) cause muscle cramps
 - d) lead to heat stroke

Answers:
3A 4C

*"ABC – Always
Be Carefull."*

Hazard Recognition and Confined Spaces

– Lesson 17



Main Objectives

Underline/highlight the answers to these questions as you read.

- What are the main types of hazards?
- What are five approaches to hazard control?
- What is the definition of a confined space?
- When a young worker enters the workforce, he/she is typically inexperienced. This lack of experience extends not only to the job but also in recognizing a potential or existing hazard.

Hazard

Any circumstance or condition which poses the risk of an incident is a hazard.

Hazards can exist in many forms: they can be visible or hidden, a condition or an act. A visible hazard could be an open hole without barriers to warn people in an area where someone could fall in and suffer an injury. This is an example of a visible hazardous condition. Examples of less obvious hazards are those related to entry to confined spaces, e.g. invisible toxic gases, deficiency of oxygen.

Hazard Assessment

A thorough examination of an operation (job site, shop, etc.) to identify actual and potential hazards is a hazard assessment.

Four main parts of every workplace are:

1. The **people** (employees, visitors, clients, suppliers, subcontractors, etc.).
2. The **environment** they work in.
3. The **materials** they work with.
4. The **equipment**/tools they use.

To identify hazards, all four of these components must be examined and evaluated to see what possible hazards may be present.

Ask yourself the following questions to identify potential hazards when conducting a [hazard assessment](#).

People

Workers

- Do workers have skills and knowledge for assigned work and associated hazards?
- Is there a lack of, or inadequate training of, workers for the job?
- Is there a lack of, or incorrect, instruction given to workers?
- What is the worker's ability, knowledge, motivation?
- What is the worker's physical and emotional stability?
- Could a worker be caught in between or on objects?
- Could workers make contact with objects, or be struck by objects?
- Could workers suffer stress, strain, or injury from pushing, pulling or lifting?
- Could workers suffer illness or industrial disease?
- Do workers adhere to safe work practices and procedures? Are these procedures and practices developed?
- Is the worker's performance influenced by drugs or alcohol?

There is a tendency to pretend that hazards don't exist.

Management

- Is there a commitment to safety policies and programs?
- Does orientation take place for new or transferred workers?
- What about the hiring and placement of workers?
- Are workers properly supervised?

Visitors

- Frequency of visits?
- Policies and rules restricting visitors in the work place?

Subcontractors

- Are there pre-bid qualifications?
- Are there policies and rules regarding sub-contractors?

Environment

- Are there potential problems with housekeeping and orderliness?
- Is the worker exposed to extreme cold, heat, or adverse weather conditions?
- Is excessive vibration or noise a problem?
- Is there a problem with lighting?
- Is exposure to harmful radiation possible?
- Is there dust, vapours, fumes or mists in the air?

Materials

- What harmful substances are workers exposed to?
- Is there exposure to chemicals (solvents, gases, caustics)?
- Are WHMIS regulations in place?
- Is there exposure to electricity (grounding, arcing)?
- Is there the risk of biological hazards?
- Do you have purchasing, shipping and receiving policies in place?
- What specific problems arise involving material handling?
- Are materials stored safely?
- How could materials contribute to the loss of safety, quality or productivity?
- Are materials the proper and safest materials for the job?
- Are personal protective equipment policies in place?



There is a tendency to pretend that hazards don't exist.

Equipment/Tools

- Is there a purchasing policy in place and does it meet legislative requirements?
- Is safety equipment and personal protective equipment (PPE) provided?
- Is safety equipment and PPE used?
- Are suitable equipment and tools provided in good condition and of good quality?
- Are equipment and tools inspected on a regular basis?
- Are there proper storage facilities for equipment and tools?
- Is there a planned maintenance program?
- Is there a safe work permit system?
- Is there a lock out system?
- Do tools and equipment have a safe design and are they ergonomically friendly?
- Do equipment, tools or machines present any potential hazards?
- What equipment or tool emergencies may likely occur?
- How could equipment/tools contribute to loss of safety, quality or productivity?

Hazard Control

Measures taken to eliminate or reduce the risks of hazards in the workplace are **hazard controls**.

There are five approaches to hazard control.

1. **Elimination:** The ultimate control measure is to eliminate the workplace condition or act presenting the hazard.

For example:

- removing a fire hazard by using non-combustible materials instead of combustible,
- eliminating a manual handling task by using a mechanical lifting device,
- eliminating protruding objects and materials,
- repairing a leak and eliminating toxic fumes, and
- removing and disposing of defective ladders.

Eliminating a hazard is obviously the best method of control. However, not all hazards can be totally eliminated. The next best option becomes substitution.

2. **Substitution:** Substituting one piece of equipment or chemical with another less hazardous item, or substituting a particular work activity with a safer method.



For example:

- purchasing controls (i.e. purchasing less toxic materials, tools and equipment with improved safety features) – also considered an administrative control, and
- replacing ineffective personal protective equipment.

3. **Administrative Controls:** When engineering controls are not practical, administrative controls are used. Administrative controls deal with directing people.

When workers' health and safety depends on strict enforcement and adherence to policies, procedures, supervision, training and constant motivation, there must be a strong commitment from management to the safety program.

Administrative controls may include the following:

- measuring performance,
- establishing procedures for the ongoing, maintenance of equipment and facilities,
- establishing good housekeeping practices,
- developing and implementing safe work practices, procedures, and work permits,

- monitoring all aspects of the safety program,
- hiring and placement of workers,
- scheduling hazardous activities when there are a few workers in the plant,
- scheduling of workers to reduce exposure to a particular hazard,
- training and education,
- establishing formal safety inspections, and
- using a suggestion box.

Administrative controls can significantly contribute hazard control.

4. **Engineering Controls:** The preferred control for any hazard is to engineer out the hazard. It is preferable to depend on engineered controls than to rely on controls that require continual human intervention such as elimination, substitution, administrative controls and personal protective equipment. Ideally, engineering designs should be made at the conceptual stage of a project.

Engineering controls include:

- installing security fences to restrict access by unauthorized personnel,
- installing additional lighting,



There is a tendency to pretend that hazards don't exist.

- removing the worker from exposure to a hazard by using automated or remote mechanical devices,
- making process or procedural changes,
- screening in welding areas to protect people from sparks and light emissions from arc welding,
- establishing lockout procedures (electrical, mechanical, steam, etc.),
- installing noise control barriers or noise suppresser,
- fitting heavy equipment with roll-over protection,
- designing scaffolding systems to ensure proper erection, maintenance and dismantling of the structure,
- installing machine guards around moving pulleys, gears, sharp edges, electrical devices and hot surfaces,
- installing monitoring and warning equipment, and
- installing ventilation systems to remove toxic fumes and vapours.

Proper design and layout of work areas will eliminate and reduce the level of hazard.

5. **Personal Protective Equipment:** When elimination, substitution, or administrative controls fail to provide the required protection, personal protective equipment (PPE) should be considered as the last line of defence or as back-up protection. PPE may be used as a supplement to these other controls but not as a substitute for them. Workers

often don't like to wear PPE because they can be uncomfortable, unattractive, and awkward.

Consequently, employees may avoid wearing it, not wear it properly, or modify it for comfort. If there is equipment failure or if PPE is used incorrectly, the employee is automatically exposed to hazards.

In using PPE as a control method, the supervisor must consider the following:

- where PPE is required,
- which type of PPE is suitable,
- what training is needed in the proper use and maintenance of PPE, and
- enforcement of these.

Inspect all PPE regularly for defects and replace when necessary.

There are two situations where the use of personal protective equipment is vital in hazard control.

1. When carrying out normally hazardous operations, such as welding, spraying or working in confined spaces.
2. In emergencies or when conducting activities where the level of hazards are unknown.

Follow-Up

Once a control method has been established it must be implemented. A description of the control method, the person responsible for implementing it, and the date the control method must be completed and should be documented.

There must be a follow-up to confirm that the control method was implemented and it's effectiveness in eliminating the potential hazard.

Cautions

There is a tendency to pretend that hazards don't exist. This view will only harm an organization over the long run and put you – the worker – at risk. Some hazards can be eliminated, but others must be identified and the risks controlled by use of appropriate procedures or devices.

There are many ways for employees to avoid creating hazards in the workplace. Some of these are:

- Check your work area and activity for possible hazards.
- Maintain good housekeeping standards.
- Inspect tools and equipment prior to use.
- Maintain protective equipment in good condition.
- Follow established procedures, no shortcuts.
- Don't take short cuts.
- Report hazards and incidents as soon as possible.

Hazard recognition or being able to identify hazards and unsafe situations where you work is not just common sense.

Having an understanding about safety on the job is only a result of:

- seeing how to do it right,
- learning how to do it safely,
- practising how to do it safely until it becomes a skill, and
- keeping a safe attitude.

Confined Spaces¹

A confined space is an area:

- where your entry and exit are limited (sometimes there is only one entrance), or
- the ventilation is poor.

Examples of confined spaces include storage tanks, cold storage lockers, ships' holds, tunnels, cellars, manholes and sewers. Any workplace may become a confined area if the entry and exit are limited and it has poor ventilation.

If you enter a confined space where the ventilation is poor you can suffocate and die. Confined spaces may lack enough oxygen. The oxygen in the air of confined spaces can be used up by rust, fire and bacteria. Oxygen can also be moved or pushed out of the space by other gases. These gases may require special

Quick Quiz #33



True or False

1. Most young workers are inexperienced in identifying hazards on the job site.
2. An open hole without barriers to warn somebody is an example of a hidden hazard.
3. Most hidden hazards involve confined spaces.
4. You can avoid creating hazards by following established procedures and avoiding short cuts.

Answers:

1T 2F 3T 4T

¹ About Working Safely in Confined Spaces; Northwest Territories Safety and Public Services; Scriptographic Communications Ltd., Willowdale, Ontario.



There is a tendency to pretend that hazards don't exist.

“A worker was overcome by fumes in a confined space. A second worker entered the confined space to rescue the overcome worker and was also overcome by the fumes. Both died.”

equipment to detect them because they cannot be seen or smelled.

If there are toxic gases in a confined space the worker can experience irritation of the skin, eyes, nose or throat. The gases can prevent oxygen from getting to him/her.

Some gases that collect in confined spaces can explode or are flammable. This may be a result of the materials that are stored, cleaning materials or gases that are formed when materials are broken down.

Workers may be asked to enter a confined space to inspect for damage or wear. Large storage tanks have to be inspected to make sure that there are no cracks that will leak. If cleaning and repairs are done it may be necessary to do them inside the confined space.

Never enter a confined space if you are not authorized to do so. Before you enter the space, know and follow the safety procedures of your employer.

A trained person should test for hazards in the confined space. If hazardous gases are detected, make sure that the space is ventilated and cleaned, then tested again. Ventilation and cleaning require the use of machinery to remove harmful gases and substances such as sludge. Do not enter until the space is safe. Tests should be done regularly and before re-entering a confined space after breaks.

Personal protective equipment should be used for work in confined spaces:

- A respirator should be used. The type of respirator depends on the hazard.
- A safety harness with lifelines should be worn. The safety lines allow you to be removed from a confined space should you become unconscious. The harness should have a quick-release method for emergency situations.
- Safety helmets protect you from falling object.
- Eye protection protects you from dust.
- Your employer is responsible for ensuring you have appropriate PPE. You are responsible for checking it both before and after you put it on and take it off. It could save your life.

While working in a confined space:

- Leave immediately if you start to feel sick or dizzy. Report the condition to your supervisor.
- Do not smoke in confined spaces.
- Let a qualified person do the testing for hazards.
- Be sure that emergency equipment is available.
- Never remove your personal protective equipment.

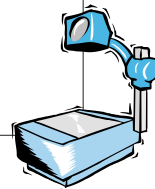
If a co-worker needs help while in a confined space:

1. Remove the victim by using the safety line, if possible.
2. Call for help and wait for it to arrive before entering area.
3. Ventilate the area while waiting for help.
4. Start artificial respiration.
6. Do not re-enter the area until the cause of the incident is found and corrected.

Hazard Assessment Checklist

A sample hazard assessment checklist follows. Review the questions in the checklist. Cross out questions that do not apply to your situation and add questions relating to the special nature of your work experience program.

Identification			
Company Name: _____	Date of Assessment: _____		
Address: _____	Location of Assessment: _____		
Assessment Team - Names, Positions: _____			
	Yes	No	
Safety Program			Personal Protective Equipment
Company Safety Policy	_____	_____	Potential Hazards
Company Safety Manual	_____	_____	Policy/Rules in Place
Safe Work Practices	_____	_____	Basic PPE in Use
Copies of <i>Safety Acts and Regulations</i> available	_____	_____	Specialized PPE Available
Inspections	_____	_____	Equipment
Investigation	_____	_____	Mobile Equipment
Administration	_____	_____	Vehicles
Training			Power Tools
Worker Training	_____	_____	Hand Tools
Management Safety Training	_____	_____	Scaffolds
Supervisory Safety Training	_____	_____	Ladders
First Aid			Yards/Grounds
Facilities	_____	_____	Drainage
Supplies	_____	_____	Stacking of Materials
Personnel	_____	_____	Road Signs/Speed Limits
Records	_____	_____	Lighting
Emergency	_____	_____	Visibility, Fog, Mist, Dust
Services Availability	_____	_____	Parking, Fencing
Fire Prevention			
Smoking/No Smoking Rules	_____	_____	
Scheduled Fire Inspections	_____	_____	
Fire Extinguishers	_____	_____	
Fire Alarm System	_____	_____	
Fire Department Assistance	_____	_____	

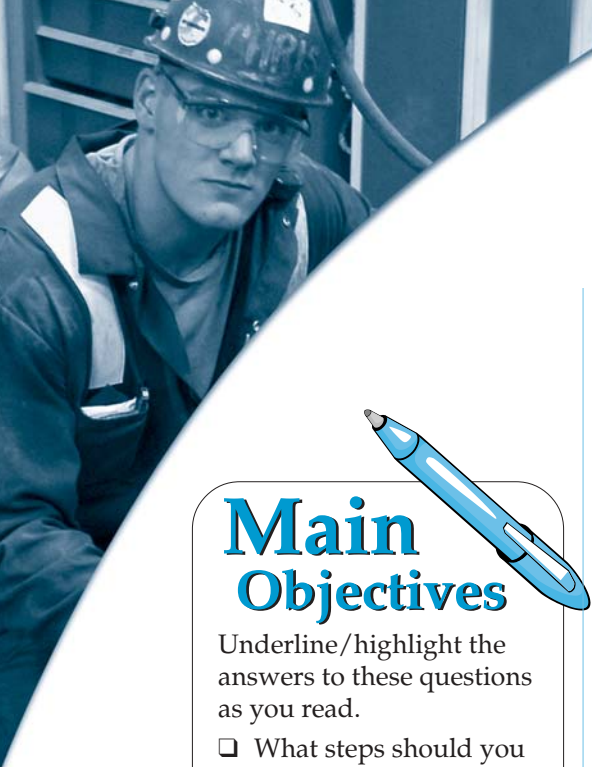


Quick Quiz #34



1. Which statement is not true about confined spaces?
 - a) Your ability to enter is limited.
 - b) Your ability to leave or exit is limited.
 - c) The ventilation is poor.
 - d) The lighting is generally poor.
2. Hazard recognition or being able to identify hazards and unsafe situations where you work is more than just common sense, true or false?
 - a) True
 - b) False
3. What is a thorough examination of an operation (job site, shop, etc.), to identify actual and potential hazards, called?
 - a) MSDS inspection
 - b) Hazard assessment
 - c) RSI inspection

Answers:
1D 2A 3B



Injury on the Job

– Lesson 18

Main Objectives

Underline/highlight the answers to these questions as you read.

- What steps should you follow if injured on the job?
- What does a case manager do?

Injury on the Job

As it was stated in the introduction to *Workplace Safety: Safety and the Young Worker*, one of every seven workers under the age of 25 will be injured each year.

If you are injured while on the job there are three important steps.

1. **The most important thing to do is to get medical aid.**

For all but the most minor injuries, report to the medical attendant immediately. If your work site does not have a medical attendant, go to the emergency ward at the nearest hospital or report to the health centre station.

If you are unsure about how serious an injury is, have it checked out at the hospital or at the health centre. The hospital and health centre have specialized equipment and people who are highly trained to give a diagnosis and treatment. Sometimes minor injuries require special treatment: for example, stepping on a nail may require a **tetanus** needle.

When you are at the hospital, make sure that the doctor or nurse knows that the injury happened while you were at work. The doctor will report the circumstances of the injury to the Workers' Compensation Board on a Doctor's Report form.

2. **Report any injuries to your foreman, supervisor or employer.**

This is important. If the injury happened because of an unsafe condition at work, the employer will want to prevent other workers from being injured as well. The employer must complete an Employer's Report of Accident form that will be submitted to the Workers' Compensation Board. He/she should also record your accident in an Accident Record Book. Every work site should have an Accident Record Book.

3. **You will be required to complete a Worker's Report of Accident that will also be sent to the Workers' Compensation Board.**

Why Should Forms Be Completed?

Every province and territory in Canada has a Workers' Compensation Board (WCB). The WCB assists workers who are injured while on the job.

This assistance includes:

- payment for medical treatment,
- help in adapting to a new life style that is a result of injury, and
- percentage of payment for lost wages.

“One of every seven workers under the age of 25 will be injured each year.”

If you have an injury while working, you may be eligible to receive payment for wages you lose. If you are disabled by the accident, you may be eligible for help to get as healthy as possible, and to be trained for new work if you cannot return to your old job.

The forms must be completed before you can be compensated or receive assistance.

The WCB, upon receipt of the first Report of Accident that comes into the office, will set up a claim. Upon receiving all the paperwork, your claim will be reviewed and if it meets specific requirements, a person called a case manager will be assigned to your case. The case manager will:

- make sure that all paperwork in your file is complete,
- ensure that you are paid (according to a rate that is calculated according to your regular earnings),
- review your file regularly,
- make sure that you are following doctor’s instructions, and
- review the medical instructions.

The Workers’ Compensation is a no-fault insurance scheme. If you are injured on the job, you will receive benefits even if you made the mistake that caused the injury.

The WCB also assists the families of workers who are killed while on the job. This assistance may be financial or in the form of counselling.

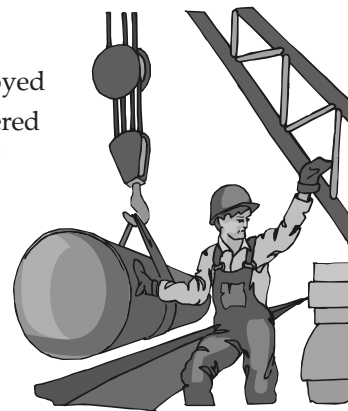
Workers’ Compensation Board

All employees who carry on business in the Northwest Territories or Nunavut, even temporarily, must register with the WCB within 10 days of commencing operation.

Every employee of a company that is registered with the WCB is covered by the compensation system. Even employees of companies that should be and are not registered are covered. Part-time employees are also covered.

In order for you to receive compensation from WCB:

1. You must be a worker.
2. You must be employed in an industry covered under the Workers’ Compensation Act.
3. You must have an industrial injury or disease.





“One of every seven workers under the age of 25 will be injured each year.”



Quick Quiz #35

True or False

1. One in 10 young workers under the age of 25 will be injured each year.
2. It is very important to let your nurse or doctor know that the injury occurred at work.
3. When you are injured, your doctor must complete a form for WCB.
4. When you are injured, your employer is not required to fill out a form for WCB because you have already done so.
5. Upon receiving the first report of your accident, WCB will set up a claim and assign a case manager to your case.
6. You are covered by WCB during work hours only.

Answers:

1F 2T 3T 4F 5T 6T

You are covered by WCB:

- during work hours,
- while you are in a company vehicle doing company business,
- while on the company premises (parking lot, construction camp), and
- while you are doing activities you have been instructed to do (e.g. if you are injured in a store picking up supplies for the company).

Where Does the Money for the Workers' Compensation Board Come From?

Employers pay money to the Workers' Compensation Board so that if workers are injured they will have help. The workers do not have to pay any money for this protection. It is against the law for an employer to deduct WCB payments from your pay cheque. The money collected from the different employers is invested and managed so that when a worker has an injury, he/she can register a claim. The WCB is similar to an insurance company.

If you have a claim and are dissatisfied with a decision, contact the case manager. Ask for a review. If you are still dissatisfied, you may appeal the decision. If you decide to appeal, the WCB will give you information on how to contact the Workers' Adviser. This is provided free of charge. The Workers' Adviser has access to your files, with your consent, but is not employed by WCB.

A Detailed Look at the Worker's Report of Accident Form

Two incident scenarios are presented. Choose one and complete the Worker's Report of Accident form which follows. Try to be as thorough as possible and complete as many sections as possible.

Scenario 1:

(A time loss scenario – be sure to fill out both pages of the Worker's Report of Accident form.)

John Brown lives at 100 Arctic Ave., Yellowknife, NT X1A 3S5. His phone number is 873-5678. John is 15 years old and was born on October 25, 1987. John has worked as a stock boy since June 10, 2001 at ABC Foods, 300 Main St., Yellowknife, NT Z1X 5S4. John's social insurance number is 333-345-789. John earns \$7.50 per hour and works 30 hours per week. On Saturday, August 25, 2001 at 4:00 p.m., John slipped on a wet floor as he was entering the freezer. As he landed, he twisted his right ankle. Sheri Smith who also works at ABC Foods saw the accident and rushed to help. John insisted he was okay and continued to work after he informed his supervisor, Larry Green, of the accident. By the end of the day, John's ankle was swollen and very painful. John decided to go to

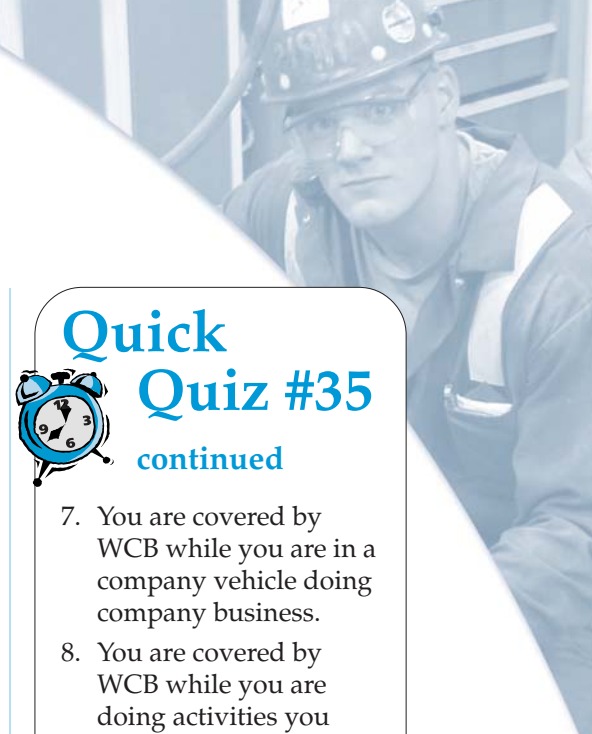
Stanton Hospital and have it looked at. After being seen by Dr. J. Doom, John was advised that he had sprained his ankle and needed to stay off it for one week. As John was scheduled to work the next day, he called his employer in the morning, at 873-1234, and advised him that he had to miss a week from work.

Scenario 2:

(A no time loss scenario – be sure to fill out the first page of the Worker's Report of Accident form.)

Jane Smith	Pets are Best
Born: March 6, 1978	Veterinary Clinic
Address: General Delivery,	Box 123,
Iqaluit, NU H0H 0H0	Iqaluit, NU H0H 0H0

Jane Smith is a Certified Animal Health Technician and works at Pets are Best Veterinary Clinic. On September 10, 2001 at 6:00 p.m., Jane was putting money into the safe, when the door slammed catching her thumb. Immediately her thumb swelled up and a blister formed. Her supervisor, Dr. I. Kilatokalook, took her to Baffin Regional Hospital where a nurse released the pressure on the thumb by breaking the blister. The swelling went down and she was able to return to work the next day, which was her scheduled shift.



Quick Quiz #35

continued



- You are covered by WCB while you are in a company vehicle doing company business.
- You are covered by WCB while you are doing activities you have been instructed to do by your employer.
- You are covered by WCB when you get home after work.

Answers:
#6 L8 LZ



WORKERS' COMPENSATION BOARD
Northwest Territories and Nunavut

Worker's Report of Accident

IF YOU HAVE ANY QUESTIONS ABOUT COMPLETING THIS REPORT, PLEASE CONTACT US AT THE NUMBERS PROVIDED ON THE REVERSE. PLEASE COMPLETE IN FULL. SIGN AND RETURN THIS FORM TO THE ADDRESS ON THE REVERSE TO ENSURE YOUR CLAIM IS ADMINISTERED IN A TIMELY MANNER.

Employer		Worker's last name		Worker's first name	
Address – Include postal code		Postal address – Include postal code		WCB Claim Number	
Telephone – Include area code		Telephone – Include area code			
Supervisor's Name		Residential Address			
Place of Accident – Name of City, Town/Province, Territory		Date of Birth	YY MM DD	Social Insurance Number	
At the time of the accident, was the work you were doing for the purpose of your employer's business? <input type="checkbox"/> Yes <input type="checkbox"/> No		Marital Status	Dependants	Sex	<input type="checkbox"/> M <input type="checkbox"/> F
Was it part of your regular work? <input type="checkbox"/> Yes <input type="checkbox"/> No		Occupation	Is a job description available? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Accident Date	YY MM DD	Time	AM	PM	
Date first disabled from work?	YY MM DD	Time	AM	PM	
<p>IMPORTANT</p> <p>1. How did the accident happen and what injury did you receive? Be specific (i.e. lifting, or, if you fell, how far did you fall? State right or left, if applicable). State how long you have been doing this work.</p>					
				<p>When did you report the accident to your employer? YY MM DD</p> <p>Time AM PM</p>	
<p>2. IMPORTANT – Please list any witnesses Name and Address – Include phone or contact number</p> <p>Name and Address – Include phone or contact number</p> <p>Attach extra sheet(s) if necessary.</p>					
3. Name of attendant if first aid was provided.		Where?		When? YY MM DD	
4. Name and address of attending physician/dentist.		What hospital did you go to?		When? YY MM DD	
5. Have you had a similar disability before? <input type="checkbox"/> Yes <input type="checkbox"/> No Yes – explain					
Have you had previous claims with this Board or any other Board? <input type="checkbox"/> Yes <input type="checkbox"/> No Yes – give dates and nature of injury					
6. Were you living at your employer's house at the time of the accident? <input type="checkbox"/> Yes <input type="checkbox"/> No		Are you related to your employer? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are you a partner, director or other officer of the company? <input type="checkbox"/> Yes <input type="checkbox"/> No Yes – specify					
Do you employ workers yourself? <input type="checkbox"/> Yes <input type="checkbox"/> No Yes – explain		Are you an owner/operator? <input type="checkbox"/> Yes <input type="checkbox"/> No Yes – explain			
<p>IF DISABLED LONGER THAN DATE OF ACCIDENT, PLEASE COMPLETE THE REVERSE SIDE OF THIS FORM. REPORT THIS ACCIDENT TO YOUR EMPLOYER IMMEDIATELY.</p>					

“One of every seven workers under the age of 25 will be injured each year.”

7. Have you returned to work? Yes No
 If yes, give the date and time you returned to work. | YY | MM | DD | Time | A.M. P.M.

Did you work between first day of your disablement and your final return? Yes No
 If yes, give date and times From | YY | MM | DD | Time | AM PM To Time | A.M. P.M.

Were you paid anything during your period of disability? Yes No Total amount \$ _____
 If yes, explain _____

8. Type of employment: Casual Summer Student Seasonal Apprentice Yes No
 If the above choices do not apply, see question 9. Is your job subject to Seasonal Layoffs Yes
 Lack of Work Layoffs Yes

9. Are you a permanent employee? Yes No
 If you have answered yes, please complete **Section B**. If you have answered no, complete **Section A**.

SECTION A

How long have you been employed by this employer?
 State your gross earnings for the past 12 months. If less than 12 months, state your gross earnings to date.
 From | YY | MM | DD | To | YY | MM | DD | \$ _____

Specify usual days and hours in work week _____
 Usual working hours per day _____
 Hours _____ Days _____ FROM _____ TO _____
 A.M. P.M. A.M. P.M.

If you work an irregular work week (shifts, turnarounds, etc.) please supply one complete shift cycle:
 Date shift cycle started | YY | MM | DD | Number of days on _____
 M T W T F S S M T W T F S S M T W T F S S

In the past 12 months, what other employment earnings or income did you receive? (attach sheets if necessary)

Name of Company _____ From | YY | MM | DD | To | YY | MM | DD | Total Earnings _____
 Address/Phone # _____
 Name of Company _____ From | YY | MM | DD | To | YY | MM | DD | Total Earnings _____
 Address/Phone # _____
 Name of Company _____ From | YY | MM | DD | To | YY | MM | DD | Total Earnings _____
 Address/Phone # _____

Do you have a second job? Yes No
 If yes, have you missed time from this job due to your injury? Yes No
 Name of employer _____ Contact name and phone # _____

SECTION B

How long have you been employed by this employer?
 State your gross earnings for the past 12 months. If less than 12 months, state your gross earnings to date.
 From | YY | MM | DD | To | YY | MM | DD | \$ _____

Usual working hours per day _____
 From _____ A.M. P.M. To _____ A.M. P.M.
 Specify usual days and hours in work week _____ Hours _____ Days _____

Specify amount of time off for lunch. Are you paid for this time? Yes No

Circle usual days off _____
 Mon Tues Wed Thurs Fri Sat Sun

Rate of pay at the time of accident was \$ _____
 Hour Week Bi-Weekly Month Other - Please explain

Do you work overtime on a regular basis? Yes No
 Overtime Rate \$ _____ Number of hours per Week _____ Month _____ Shift _____

Do you normally receive any other benefits? (ie. vacation pay, settlement allowance, etc.) Yes No If yes, explain fully and give amounts.

If you work an irregular work week (shifts, turnarounds, etc.) please supply one complete shift cycle:
 Date shift cycle commenced | YY | MM | DD | Number of days on _____
 M T W T F S S M T W T F S S M T W T F S S

Do you have a second job? Yes No
 If yes, have you missed time from this job due to your injury? Yes No
 Name of employer _____ Contact name and phone # _____

I declare, all the information I have given on this form is true and correct and I elect to claim compensation for the above mentioned injuries or disease. This will authorize the Board and boards of review to obtain or view, from any source whatsoever, including records of physicians, qualified practitioners or hospitals, a copy of records pertaining to examination, treatment, history and employment of the undersigned. I understand it **may be a criminal offence** to knowingly make a false claim or to work and earn income while receiving workers' compensation without advising the Board. Failure to complete all sections may result in a delay of the administration of my claim.

Signed at _____ Date _____ Signature _____
 City/Town/Village

Any personal information, as defined by the Access to Information and Protection of Privacy Act (ATIP), requested herein is for the purpose of administering the Workers' Compensation Act and is authorized by the Act. For more information, please contact the WCB ATIP Co-ordinator at 1-800-661-0792 or 1-867-920-3888.

Head Office: Box 8888 • Yellowknife, NT X1A 2R3 • Telephone: (867) 920-3888 • Toll Free: 1-800-661-0792 • Fax: (867) 873-4596
 or
 Box 669 • Inqluit, NT X0A 0H0 • Telephone: (867) 979-8500 • Toll Free: 1-877-404-4407 • Fax: (867) 979-8501
 Box 368 • Rankin Inlet, NT X0C 0G0 • Telephone: (867) 645-5600 • Toll Free: 1-877-404-8878 • Fax: (867) 645-5601

CS001 9910
 1-867-920-3888
 1-877-404-4407
 1-800-661-0792



Labour Standards and Fair Practices

– Lesson 19

Main Objectives

Underline/highlight the answers to these questions as you read.

- ❑ What are the minimum conditions for employment according to the *Labour Standards Act*?
- ❑ The *Fair Practices Act* prohibits what form of discrimination?

Labour Standards and Fair Practices

When you start a new job you should be knowledgeable about safety on the work site. Safety includes knowing about **hazards**, recognizing hazards and knowing about your rights as a worker. The national Workplace Hazardous Materials Information System legislation gives you a base to protect you from hazardous materials. The NWT and Nunavut *Safety Acts* and the NWT and Nunavut *Mine Health and Safety Acts* also set minimum conditions for safety. All of these laws give you the right to refuse unsafe work.

There are also other laws that protect you while on the job. These are the *Labour Standards Act* and the *Fair Practices Act*. These are specific to the Northwest Territories and Nunavut. Other provinces and territories have their own similar laws.

Labour Standards Act

Labour standards are sometimes called employment **standards**. The *Labour Standards Act* sets out the minimum conditions for employment. These conditions include:

- hours of work,
- minimum wages,
- termination or ending of employment,
- annual vacations,
- general holidays,
- pregnancy and parental leave, and
- payment of wages.

You cannot waive or contract out of these statutory minimums. For example:

- If an employee signs an agreement to not receive overtime pay when it is required by law, then that agreement is not valid.
- An employer who offers to pay cash under the table to you does not have to pay coverage and taxes for you. This could affect you later if you require unemployment insurance or apply for compensation from WCB.



Tell me more about WHMIS!

Before you start a new job make sure you know:

- what your rate of pay is and what the present minimum wage is;
- if you will be paid by the hour, the day, the month or the year; and
- how many hours the pay rate covers (after those hours, overtime is paid).

Once you begin work, make a record each day of the number of hours you work. Keep this for future reference should you need it.

Your employer is required to give you a **pay slip** each time you are paid. On the pay slip there should be basic information such as:

- the dates of the pay period,
- the number of hours being paid,
- the rate of pay, and
- details of the deductions taken from the wages.

Keep these pay slips. You may need them if problems develop. Labour Services staff will want to see them if you require their help. If a problem does develop, deal with it immediately. If you do not feel comfortable talking it over with your employer, call Labour Services for advice. An officer can explain your rights and suggest what to do next.

There may be times at work when you feel you are not being treated with respect or things are said or done that make you feel uncomfortable. If this occurs, write down the details of what happened immediately. Labour Services may be contacted for advice. The paper on which you documented the incident may be used in the future as **evidence or proof of the incident.**

Most employers treat their employees well. However, you need to be prepared in case you have a bad experience.

Laws are set out that employers must follow to ensure the safe and fair treatment of employees. There are also **responsibilities of employees:**

- to go to work each time they are scheduled unless they are sick or have another legitimate excuse for not attending,
- to arrive at work on time,
- to leave when they are supposed to go,
- to notify their employer if they are not able to go to work, and
- to contact their employer about their absence in a reasonable period of time before the work is to be completed.

Quick Quiz #36



True or False

1. Labour standards are sometimes called the employment standards.
2. Minimum wage and annual vacations are examples of labour standards.
3. Hours of work and parental leave are examples of labour standards.
4. You must ask your employer for a pay slip indicating your rate of pay and hours worked during the pay period.
5. You have responsibility as an employee to contact your employer about any absence from work within a reasonable period of time before your work was to begin.

Answers:

T F F T T



It is important to know the rules and protect yourself by keeping your own records.



Quick Quiz #37

1. Which of the following is not covered under the *Fair Practices Act*?
 - a) race
 - b) creed
 - c) sex
 - d) marital status
 - e) nationality
 - f) age
 - g) they are all covered under the Act
2. Which of the following is allowed?
 - a) dismissing a person from a job because she is pregnant
 - b) asking questions about your age or sex on an application form
 - c) releasing someone who has a conviction (even though he/she was pardoned)
 - d) releasing someone who is always showing up late for work

Answers:
DZ DI

The *Fair Practices Act*

The *Fair Practices Act* is a territorial law which protects you from certain forms of discrimination. Only certain types of discrimination violate territorial anti-discrimination or human rights laws. The *Fair Practices Act* prohibits discrimination based on:

- race;
- creed;
- colour;
- sex (including pregnancy);
- marital status;
- nationality, ancestry;
- place of origin;
- disability;
- age;
- family status; and
- conviction for which the person has been pardoned.

Some areas of discrimination listed in the Act do not apply to certain organizations and employment situations. The Act contains a provision that allows for Affirmative Action programs. Approval may be given to program that improve and promote the welfare of certain groups of people.

Some examples of illegal discrimination on the job site are:

- dismissing a person from a job because he belongs to one of the groups stated above,
- questions on a job application form or in an interview regarding age, sex, disability or any grounds listed above,
- refusing to hire someone because of a physical or mental disability that is unrelated to the job,
- different wages based on sex, and
- sexual or racial harassment.



Harassment

Harassment takes many forms but can generally be defined as a comment, behaviour or gesture directed toward an individual or groups which is insulting, intimidating, humiliating, malicious, degrading or offensive. An unwelcome behaviour or comment that is harmful to the work environment is considered to be harassment. Different people and cultures vary in what behaviour or comments make them feel uncomfortable. In some situations, behaviour may be rude and offensive while in another, it may not. For this reason it is difficult to define the rules.

If you are exposed to behaviour on the work site that makes you feel uncomfortable it is important that you tell your co-worker, or supervisor what it is that makes you feel uncomfortable. The sooner this is done, the better. If you do not speak up, your silence may give the impression that the behaviour is acceptable to you. The behaviour may continue or become worse – set your boundaries early. People respect those who have, and exhibit, self-respect.

What can you do if you feel that you have been discriminated against?

If you think that you have been discriminated against contact the Fair Practices Office for advice. If you wish to file a complaint, a Fair Practices Officer will investigate to find out if discrimination did occur. The officer may then work with the people involved to see if the situation can be corrected. If you and the other people involved cannot reach an agreement, the Fair Practices Officer may hold a hearing. The Fair Practices Officer has the power to make a decision about the dispute.

After the Fair Practices Officer has made his decision, an appeal may be made to the Supreme Court of the Northwest Territories or Nunavut if you or the other person are not happy with the decision.

An employer cannot fire or penalize you for filing a complaint about discrimination at work.

Quick Quiz #37



continued

3. If you feel that you are being discriminated against or harassed, you should:
 - a) hire a good lawyer
 - b) consider looking for a different job
 - c) tell your coworker or supervisor as soon as possible
 - d) immediately contact the Fair Practices Office

Answer:
D



Workplace Safety Passports

(WCB) Workplace Safety Passports

You are eligible for a wallet size passport (card) which identifies that you have passed the following programs/final exams:

- Workplace Safety: Safety and the Young Worker final exam
- WHMIS final quiz

The passport will also include a photo ID (if one is provided by the school). You can show this passport to prospective employers to indicate that you have relevant job related training.

On both the Workplace Safety final exam and the WHMIS final quiz, you will require a 70% to pass. Information on which courses students have passed can be sent by the schools to WCB using the Workplace Safety Passport Report Form found in the Instructor's Manual. Once WCB has received information that you have passed these two exams, you will be sent a laminated, wallet size Workplace Safety Passport. When WCB receives confirmation on the level of First Aid course you have completed, a new passport will be issued.

If you are taking this course as a self-study program, you will need to have someone approved by WCB (e.g. someone from the school, adult educator, etc.) give you the Workplace Safety final exam and the WHMIS quiz.

If you require more information, feel free to contact:

Safety Trainer, Prevention Services

Workers' Compensation Board of the Northwest Territories and Nunavut

P.O. Box 8888

Yellowknife, NT X1A 2R3

Phone: 1-800-661-0792

Fax: 1-867-873-0262

The following article is based on a short story about a 22-year-old oil rig worker who died on the job and the impact it had on his family.

The Week Time Stood Still

by Patricia Mason

– Appendix 1

In 1994, the WCB accepted claims for 152 workers who died. Twenty-year old Darcy Jones, an oil worker from Fort St. John, was one of them. His mother, Patricia Mason, calls the dark days after his death on September 10, 1994, the “week time stood still.” This is her story.

The day broke crisp and cool. After all, it was September 10. The sun’s rays caught the shimmering waters of Shuswap Lake. It was a beautiful day!

Off we go from our Eagle Bay home to Kamloops to spend the day looking at vehicles, attending to some business and shopping.

It is 4:30 p.m. Need fuel. Stop at Petro-Can in Sorrento. See my husband Gerry with a big white fluffy puppy in his arms.

“What are you doing with that dog?”

“Taking it home.”

“No you’re not. We already have two pugs.” He reluctantly hands back the puppy.

“What are you thinking?” I ask.

“I just thought that would be a good dog for Darc.”

“What? How could we get it to him in Fort St. John? Besides, he would really like a pug.” Funny feeling in the pit of my stomach.

We are home. It is 6:30 p.m. Think I will go lie down on the couch for awhile.

Phone’s ringing. My husband picks it up. I hear him say, “She’s sleeping. This is her husband.” I hear murmurs. What is it? What has happened? Terrible feeling in my gut. Oh my God, what now? As I get up and walk, he dials the phone. Hear him say, “Get over here right away!” What’s going on? It is 9:15 p.m. I walk toward the bedroom.

The knot tightens. No, God. I have this sick feeling. Feet! Move! Darcy! It takes forever to get down the 20-foot hallway, as he hangs up the phone. My husband looks strange! “Who was on the phone?” I say.

He looks up at me, stunned. “The RCMP. They have to come out and see us.”

“Who?” I say. Long prolonged silence. I know! He looks at me. No! Not my boy!

He grabs me, folds me in his arms, holding tight. I am suffocating. I push away. “Let me go! Let me go! I can’t breathe. Let me go! What did they say?”

They are on their way out from Salmon Arm.” Forty-five minutes, I think.

“How do you know it is Darcy?”

He answers, “They wouldn’t directly say. I went through the list of the family. When I got to Darcy, they went silent - I knew.”

“What happened? Car accident?”

“I don’t know. They wouldn’t tell me.”

“He’s dead.”

“We won’t know that until they get here.”

“Don’t do this to me. We both know that when the RCMP have to come out, there has been a fatality.”

“No, hon, just wait.”

“No! No, God, please no, not my boy!”

The sick feeling deepens. I know! Coffee, have to make coffee. My husband holds me. My body is screaming. Nothing comes out!

He’s crying. I’m crying. Where am I? Coffee. Need coffee! To the kitchen! Mind racing! Water! Coffee! Start! Walk! Pace! Move in circles! What is happening? My baby!



Phone rings. Husband answers. The look on his face, confirms. The RCMP are here. “You stay in the house,” Gerry commands.

An eternity passes. I don’t want to know! My husband appears in the doorway. I know for sure. That look on his face! No words are necessary.

The constables introduce themselves. “Are you Patricia Mason?”

“Yes,” I reply.

“Is your son Darcy Carl Jones?” “No,” I wanted to scream!

“Yes.”

“There has been an industrial accident and we are here to inform you that the accident was fatal.” Silence. I am silently screaming, “Not my boy.” “Are you all right?”

“Yes. What happened?”

“I am sorry; we do not have details. The constable you are to contact doesn’t come on shift until 7:00 a.m. in Fort St. John.”

“Would you like coffee?”

“Yes, that would be nice.”

Push up! Legs move! Cups! Pour! Coffee! Crashing in my head!

“Is there anything we can do?”

“Thank you, no. We appreciate your kindness and know how hard a job this has to be for you.”

“Thank you. Good night.”

I need a drink. I am shaking like a leaf. My body is numb. I hurt. An unbearable pain. Voices. Get your thoughts under control. Concentrate. Now the really difficult part. We have to tell the family. Phone calls.

My beautiful daughter. How can we tell her that her only sibling is dead? K.C. can’t be alone when she finds out. She has already lost her father. Better call her fiancé Mike’s parents. What is she going to do when she is told? She will go berserk. Dear God, why? The tears erupt. Not for me, not for my son, but for my daughter.

Must keep alert. Mom. Have to tell Mom. Not tonight. Phone rings. Who is Gerry talking to now? It is K.C. Gerry is crying. Hands the phone to me.

“Mommy, please tell me it isn’t true!” It’s been a long time since she has called me mommy. I know her heart is broken. I know I cannot spare her the pain.

“I’m sorry, sweetheart, but it is true.”

“No, mommy, not Darcy.” She cries. I cry for her. My heart is shattered. “What happened?” she gasps, between tears.

“All we know is that he died at work. No details until 7:00 a.m.”

“I am leaving now for Fort St. John,” my husband says.

“No. Try and get some sleep first. It is 12:05 a.m.”

Gerry is staring into space. He can’t lie down to rest. Our friends Anne and Rein are there, consoling, comforting. My husband is crying.

We convince Gerry to wait until daylight at least. He’s a doer, and he needs to go toward his stepson. He has to be on the move. “Go to bed, hon,” I beg. We sit alone with each other, lost in our thoughts, feeling the pain. If there is a hell, we are living it.

The morning breaks. Time to phone the RCMP in Fort St. John. My husband asks where our son is. My husband asks what happened. He asks what seems to be all the right questions. My husband is leaving for Fort St. John in an

hour. I pack his bag. I am moving in a zombie-like state.

My husband has called our doctor. "Need something for my wife. She is in shock and starting to shake uncontrollably." Then he is driving away.

What next? Food. Need some things in town. Rein will go into town for the prescription. Should get some rest.

Phone rings. Anne monitors the calls. I can't do it. Thank God for Anne. I do not want to talk to anyone other than family. Can't think. Shock! Rein back from town. Anne says, "Take this." I take it. Now, go lie down. Do I rest? Who knows? I am up.

K.C. called. She has gotten me an outfit for the funeral and one for herself. Good. She is keeping her mind busy. Arrived safe and sound. Will call me in the morning. Rest.

It is 4:33 a.m. The house is still. I sit with my coffee, waiting for some answers. I need to know. Anne hears me up. We talk; we cry; we hold each other. She is my strength; she is my friend. Today is going to be a tough one. Today is the day we have to find out how our son died. Today should go away.

The phone calls. The many, many phone calls. This time it is Gerry. My poor husband. We should be doing this together. He knows I am not in control. He sounds exhausted. He sounds sad. He sounds miserable. He explains that our son died instantly. That he suffered no pain. He explains what happened. I do not understand. I know nothing about the oil patch and service rigs. I ask questions.

They are doing an autopsy. Gerry has met with the RCMP, with Darcy's boss, and the Workers' Compensation people. He signed for the body to be released from the funeral home.

"Do you want him cremated?"

"No, I want him home in one piece."

"Hon, sweetheart, listen to me. Under no circumstances will there be a viewing or an open casket. I'm afraid, sweetheart, that you will not be able to see Darcy again." No questions, no arguments, I could tell by the tremor in his voice. "Take comfort in that he didn't know what happened." It was no comfort.

"K.C. and I have discussed what we want. We would like him to be buried in Cranbrook, where he grew up."

"I knew that, dear. I have to make arrangements to fly the body."

"K.C. and Mike will be here late this afternoon."

"Good, you need them there."

Lots of phone calls. Everyone is so sad. Phone rings. It is Gerry again. Too many decisions to be made. Darcy's friends are asking where the funeral will be and when. O.K. I'll phone Gordon at McPherson's, the funeral home in Cranbrook. I don't want to make this phone call. This is my son, my only boy child, my baby. Gordon at McPherson's remembers us. He took charge of the services for Darcy's great-grandfather, his grandfather, his father, and his grandmother. Darcy is the last male in the family. The end of an era; there will be no more. I cry. I cry for all the generations.

The afternoon is passing slowly. Anne listens as I talk about my loss. I anxiously await Mike and K.C. We need Darcy's address book. Need to contact his closest friends.

Gerry calls. He has made arrangements for Darcy's roommates to pack up his things. They are all taking this pretty hard. Gerry will load everything into the pick-up. "We need to discuss what clothes you want him dressed



in." This is nonsense, I think. We are not supposed to outlive our children. "I guess his dress pants and sports jacket with his burgundy silk shirt."

"All right, hon. Do you want his snowboard?" This was my son. His snowboard. He water-skied, had been on snow skis since he was five, but his passion was the snowboard.

"Of course, I want his snowboard."

"There are his cars."

"See if you can store them somewhere." His '61 Valiant, converted to a stock racing car, is in the shop. He was pretty proud of that car. It could go about 160 in a quarter mile. His bike is also in the shop. I want all of what is left of my son. All the material things that made him the person that he was.

My daughter is here. I have to be strong for her. She has to be strong for me. We hug and cry. Our emotions run wild. "What happened?" K.C. wants to know.

"Gerry will have to explain it, dear."

We have to write a eulogy for the service. We also need an obituary for the papers. Still have a lot to face. K.C. is on the phone notifying Darcy's friends who are scattered across

Canada. We need Darcy's address book. Have to wait until Gerry gets back home. Finally, I am tired.

Gerry calls. They couldn't find Darcy's silk shirt. His dress shoes don't fit, nor do his dress pants. "What did you do then? I ask.

"I dressed him as he dressed everyday. His new blue jeans, t-shirt (from the drag races in Spokane; the kids said it was his favourite), his running shoes and sports coat." That was our boy.

"You sound tired" I say.

It is 4:33 a.m. Tuesday morning. It is September 13. I have a thousand thoughts running through my head. I think of nothing else but my son. I need to write my son's eulogy. No one else can do this. It is mine to do. What do I say? His laughing smile never to be seen again. Never to hear him tell one of his jokes. Never to hear him call me Shorty again. I write, but cannot capture the essence of my son. It is too painful. I write facts. That is all I can do.

K.C. is up. She holds me. We need to lay out some plans for the day. Keep busy. Music, we have to decide on music for the service. "The

Rose." What else? Anne suggests, "No More Tears in Heaven." Will phone Darcy's friend Henry. He suggests "Gone Too Soon." Isn't that true?

It is a sun-filled day. Warm for September. Neighbours stop by with cards and words of kindness. They bring food. They bring love. Flowers are delivered. There is laundry to do. We must be ready to leave for Cranbrook. I cannot leave my boy alone. We are financially unprepared. We have to speak to our banker.

Gerry is home. He is weary. The trip has taken its toll. He has deteriorated. He holds K.C. and they cry. He holds Mike and they cry. His day is not finished; the worst burden is yet to come. He has to tell us the dreadful truth. He would like to spare us, but he knows he can't. Darcy is on an aircraft headed for Cranbrook. Gerry has to tell us how he died.

"He was out on the service rig, swabbing the well. The sandline wasn't spooling properly so Darcy grabbed a poplar stick and was manually trying to spool the line into the drum when the stick snapped. He lost his balance and fell into the line and drum. It was instant. He didn't suffer. He was wrapped, the cable took . . . He lost his fingers on one hand and . . .

he had severe head injuries . . . He never knew what happened.”

Tears were streaming down all our faces. K.C. didn't understand why she couldn't see her brother to say good-bye. Gerry couldn't tell her at this point that her brother's brain was exposed and he had multiple facial injuries. He only said that the sandline travelled at about 2,600 revolutions per minute and that it did not stop on a dime.

“Did he receive first aid?”

“Yes, an Airvac helicopter was sent.” We were all lost in our thoughts.

We needed Darcy's address book. It was time to look among his possessions. I didn't know if I could handle seeing my son's things. I entered the basement with a foreboding. I knew that to see his things would mean the truth, that I hadn't been in a bad nightmare since Saturday night. I started looking for his address book. There was so little here. Was this all there was to my son?

I picked up one of his shirts, smelling his body odour and his cologne and broke into a million pieces. I lost it. I had no control. All the many

thousands of tears I had to cry came forth. I entered into a place where only I knew from where the pain came. My husband walked in and barked instructions to K.C. “Get your mother out of here and upstairs now! Don't let her come down here again.”

I had trouble controlling my legs. I was shaking. K.C. poured me a strong drink. Now, there was no comfort. Now, there was only pain. I sat, holding my son's shirt, letting my tears flow with abandon, releasing my torment, entering into that place called grief.

It is 4:33 a.m. Wednesday. Why am I awakening at this time every morning? It is very weird. I begin writing a tribute to my son:

Before you were born, I loved you.

When I looked into your beautiful big brown eyes, with those one-inch lashes, my heart was full, and I loved you.

When I tried to comb your hair and your cowlicks stood up on end, I loved you.

When I put you in K.C.'s arms, she loved you - and I loved both of you.

I continue writing through your childhood tumbles, your typical teens, your hurt, and triumphs. You could always bat those big brown eyes, knowing that I would melt, because of that gorgeous smile, get your own way, and I loved you. When I first laid eyes on you in your grad tux, tears welled and I was so very proud. Was this really my little boy? This very tall handsome fella - now a man.

The last time we were all together was Christmas. You held me in your arms, gave me your big bear hug, ruffled up my hair and called me Shorty. That was the last time we saw you. Those memories forever etched in time.

It is the day before the funeral. Deep in thought about whether I would have enough courage and strength to read my tribute during the service, I wonder about what my son had written in his address book. It reads:

Name: D. Jones

In Case of Illness or Accident, Notify

Name: GOD

Address: UP

Telephone: 777-7777

Had our son had a premonition?



We leave for the funeral home. The minister will meet us there. I wonder where my son is? Where in this big building is he? We discuss flowers, the service memorial hand-out, the cemetery plot, the pallbearers, the honorary pallbearers. We need to pick out a casket.

We see a beautiful gold one with a cream lining. Gerry asks if this can be sealed and locked. Gordon explains that it will be locked and only he will have the key. Gerry is satisfied. I hand Gordon my son's graduation picture to be placed on the casket.

We want a "Celebration of Life" service. The minister knows exactly what we want. I ask him if there is any significance to sevens in the Bible and show him Darcy's address book. The look on his face is astonishment. He says no more.

Back at my mom's, my family begins to arrive. This is going to be a day of tears. My young nieces and nephews are devastated. I feel like I have a rubber face.

That night we gather together in the family room at McPherson's for a private service. The room is filled with the most beautiful flowers I have ever seen. Where had they all come from?

Our minister needs to speak to Gerry and I outside. He has done some research after speaking to us this morning. He knew then that the sevens Darcy had written in his address book were significant and dated back to the days of the Hebrews. He explained to us that he had been too shocked to say anything that morning. He had never come across this before. He explained that there are seven days in the week, that there are seven archangels, that seven and the multiples of seven are very significant in the Bible. He asked if he could use the book in the service tomorrow. We gave it to him. We knew our son was in good hands.

It is 4:33 a.m. Friday, September 16, 1994. I lie in bed, dreading this day. Somehow the morning passes. From the time we enter the chapel, until much after the service, the day is a blur in my memory. I recall my husband holding my hand very tightly.

I remember thinking as I walked toward the front pews and my son's casket that there were a lot of people there for us and that the chapel was full to capacity. I do not remember the exact words our minister spoke, but I do remember the song "Gone Too Soon" and thinking how appropriate it was.

I remember my legs wouldn't hold me so that I could read the tribute I had written for my son, so his co-worker and second "mom" Judy read it.

I remember being ever so proud of my daughter as she walked past her brother's casket to read to him her fond farewell. I remember wondering if our son knows how very much we loved him.

At the gravesite, I only remember placing a white rose on my son's casket and my husband holding me up to get me back to the car. I know that Darcy's friends paid their final tribute to him by playing his favourite song at the gravesite.

Six months have passed since that day and the one clear memory I have is of the words spoken to me by one of Darcy's close friends. He said that Darcy was very much loved. Then he asked me if I knew why, and he replied, "Because he never gave anyone any reason not to." That was my son.

Glossary

– Appendix 2

Absorbed, Absorption

Where chemicals are absorbed through the skin. Once in the skin, they may enter the circulatory system and damage the body. Proper protective clothing and washing after removal of equipment helps prevent absorption of chemicals.

Act

Says what people can or cannot do in general terms. The details are written in the regulations which go with the Act.

Acute Effects

They occur immediately or shortly after exposure. In some cases, the effect is immediate death.

Canada Labour Code

A federal law dealing with workplace safety.

Chronic Effects

They do not show up until years later. The worker by this time may have had numerous exposures.

Class A Fires

Involve ordinary materials like wood, paper, plastic and cloth.

Class B Fires

Involve flammable or combustible liquids; for example, paint thinners, grease, gasoline, propane, kerosene, fuel oil, paint and lamp oil.

Class C Fires

Are electrical fires involving electrical equipment, switches, and power tools.

Class D Fires

Involve metals that burn, such as magnesium, potassium and sodium. The chemicals give off oxygen when they burn and may react with water or other chemicals that may be used to fight the fire.

Compressed

A substance such as air or liquid which is under pressure.

Controlled Product(s)

Any product that can cause illness, disease or death to unprotected people. Sometimes controlled products are called hazardous products, hazardous materials or dangerous goods.

Dangerous Goods

Is any product that can cause illness, disease or death to unprotected people. Sometimes dangerous goods are called hazardous products, hazardous materials or controlled products.

Disability or Disabilities

Refers to a condition which may be created as a result of an incident such as losing fingers, toes, arms, etc. The result is that you are left with less potential ability than before the incident, e.g. losing several fingers on one hand can affect your ability to perform certain functions.

Domestic

Involving the home, e.g. a domestic might be a person working in your home such as a housekeeper or a nanny.

Electrocutions

The death of a person by means of an electric charge.

Ergonomic

Means setting up the work place to meet the needs of the worker.



Fire Triangle

The dependence of fuel, heat and air on each other is sometimes called the fire triangle.

Forearms

The part of your arm between your hand and your elbow.

Guards

Used to protect the operator and nearby people from mechanical equipment.

Hazard

A danger or a risk; any circumstance or condition which poses the risk of an incident.

Hazard Assessment

A thorough examination of an operation (job site, shop, etc.) to identify actual and potential hazards.

Hazardous Material(s)

Any substance that can cause illness, disease or death to unprotected people. Sometimes hazardous materials are called hazardous products, controlled products or dangerous goods.

Hazardous Product(s)

Any product that can cause illness, disease or death to unprotected people. Sometimes hazardous products are called hazardous materials, controlled products or dangerous goods.

Heat Stress

Does not only happen in hot climates. You can suffer heat stress from working in hot workplaces like a kitchen or boiler room. If you wear heavy equipment that does not allow for air movement you may also experience heat stress. Heat stress reduces your ability to do work. You will become tired, irritable and may have cramps in your muscles. If heat stress is not recognized and treated, it may lead to heat stroke.

Hernia(s)

A weakening or rupture of the abdomen causing parts of internal organs to protrude (extend) through the abdomen wall; must be corrected through surgery.

Hypothermia

Occurs when the body core cools below its normal temperature of 37° Celsius. Death usually results when the body core temperature drops below 27° Celsius.

Incident

Any unplanned or unwanted event which results in damage or injury, or which could have resulted in damage or injury (i.e. close calls/near misses).

Ingested, Ingestion

Where toxic substances are swallowed. You may need to wear appropriate gloves. Hands must be washed with soap and running water before eating, drinking or smoking. Toxic substances will be transferred onto food and ingested unless your hands are washed.

Inhaled, Inhalation

Where toxic substances are breathed in. If there is a risk of breathing in harmful vapours from chemicals, appropriate ventilation systems or respiratory equipment should be used.

Injected, Injection

Where toxic substances may enter by means of needle or exposure to a source of high pressure.

Interprovincial

Between provinces, more than one province.

Lock Out

Means that after you cut off the power supply to machinery you take steps to make sure that the machinery cannot be turned on by someone else.

Manual Handling

Any activity that requires the use of force by a person to lift, lower, push, pull, slide or hold objects.

Regulations

The rules or details (how, where and when) of an Act or law. The big picture is usually in an Act while the specific details are in the regulations.

Repetitive Strain Injuries – also called RSI

May also be known as musculoskeletal injuries. Repetitive strain injuries (RSI) develop when you repeat the same motions numerous times. These motions involve the shoulder, neck, hands, wrists, knees, back and elbows.

Safety

The performance of activities without accident, injury or illness. Safety is something that you learn as part of any job.

Sensitization

Sometimes the body reacts strongly to defend against exposure. This is called sensitization. Examples of sensitization include rashes and asthma-like reactions such as wheezing and coughing. Sensitization is acquired over a period of exposures, but once sensitization occurs, low level exposure to the materials will cause a strong reaction.

Standards

A minimum level of expectation or achievement.

Termination

An ending, e.g. termination of your job, is when your job comes to an end because you have been laid off or dismissed.

Tetanus

A disease caused by bacteria.

Time Loss

The type of injury where the worker has been injured seriously enough that he/she must have time away from work while recovering from the injury.

Vapours

Refers to gas or gases, often flammable, given off by certain substances.

WHMIS

Workplace Hazardous Materials Information System a federal law dealing with the handling of hazardous materials.

Work Experience Program

A program where an employer provides training and experience to you on a specific career. The employer is expected to teach you how to do useful tasks in the workplace and give you valuable experience.

Workers' Compensation Board

The Workers' Compensation Board (WCB) is a corporation which administers the NWT and Nunavut *Workers' Compensation Acts*, the *Mine Health and Safety Acts*, the *Safety Acts* and the *Explosive Use Acts*. It is responsible for making decisions affecting compensation for injured workers and ensuring compensation with various safety legislation.

Work Permit

Allows you to work without pay as part of a work experience program for an employer in the NWT.

Young Worker

Anyone under the age of 25.