READY FOR WORK

Module 6. Recognizing Hazards

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Recognizing Hazards

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Introduction to Recognizing Hazards

Module Description

Recognizing Hazards is a four- to nine-hour module that provides teachers and instructors with objectives, learning activities, evaluation tools and resource lists. Approximate time frames are provided for each learning activity. Teachers can choose or adapt activities to fit their school's timetable. There are *Recognizing Hazards* supplements available that are specific to a number of Saskatchewan practical & applied arts (PAA) courses.

This module reinforces and expands upon key concepts introduced in *Module 3: Safety Works: Occupational Health & Safety for Young Workers*. Therefore, we suggest that teachers and students explore the introductory activities on workers' rights and responsibilities and identifying hazards in the workplace in that module before studying this module.

Three parts of the module

1. Introduction to Recognizing Hazards
    - Provides an overview and lists the key concepts that will be covered in the module
    - Lists foundational and specific learning objectives
    - Defines what a hazard is and outlines the steps for responding
    - Reviews the three rights: to know, to participate and to refuse
    - Provides general safety checklists to supplement recognizing hazards activities

2. Common Hazards in the Workplace
    - Describes eight common workplace hazards
    - Provides information on safe work procedures to respond to each hazard.
    - Provides background notes and worksheet activities for teachers and students

3. Occupational Health & Safety Regulations
    - Refers to *The Occupational Health and Safety Regulations, 2020*, which apply to allworkers in Saskatchewan
    - Included for teacher reference only

The Saskatchewan Employment Act and *The Occupational Health and Safety Regulations,2020* can be:

- Downloaded from the internet at www.publications.gov.sk.ca
- Ordered, for a fee, from Publications Saskatchewan (Toll free: 1.800.226.7302).

This module can be used in a number of secondary level courses, but has specific relevance for courses with transition-to-work content.

Recognizing Hazards focuses on the following key concepts:

- Workers have three basic rights: **Right to Know**, the **Right to Participate**, and the **Right to Refuse** work believed to be unusually dangerous.
- Workers also have responsibilities to act and work safely.
- The employer has the major responsibility to provide workers with a safe workplace.
- Workers can learn to recognize workplace hazards.
- Workers can help prevent incident and injury by following safe work practices and using personal protective equipment.
- Occupational Health and Safety at the Ministry of Labour Relations and Workplace Safety can assist with workplace health and safety concerns.

These are essential concepts for students entering the workforce. As new workers become supervisors and employers, knowing and having a positive attitude toward health and safety concepts will be of considerable value.

Objectives

Foundational objectives

- To identify and explain health and safety hazards in the workplace so the potential for personal injury, as well as damage to equipment and the environment, are minimized
- To introduce students to rights and responsibilities regarding healthy and safe workplace practices
- To introduce students to the subtle nature of hazardous materials around them and the need to be proactive about the safe use of these materials
- To develop an awareness of the responsibility and need for safe work procedures that must be followed in the workplace
- To develop skills, knowledge and attitudes that will enable students to act on safety knowledge and information

Specific learning objectives

- To identify hazardous materials and situations through hazard recognition activities
- To evaluate hazardous materials and situations and determine how to respond

Resource List

Module resources

1. *Don't Risk Your Life* (video available at https://rover.edonline.sk.ca/)

2. *The Saskatchewan Employment Act* and *The Occupational Health and Safety Regulations, 2020*

3. *Bullying and Harassment in the Workplace*
   Download from: www.saskatchewan.ca

4. *Saskatchewan Human Rights Code*

5. *Guide for New Workers*
   Download from: www.worksafesask.ca

6. *Tips for Young Workers*
   Download from: www.worksafesask.ca

Additional resource

1. *An Occupational Health and Safety Presentation for Young Workers* (PowerPoint with guide available at www.worksafesask.ca) or book a speaker from Saskatchewan Federation of Labour.

   Phone: 306.525.0197
   Email: sfl@sfl.sk.ca

Course Outline

Time frame: 4-9 hours

Content	Instructional techniques/strategies	Time frame
Activity 1: What is a hazard?	Activity: Basic Safety Rules and Checklists Activity: Identifying Hazards Video: *Don't Risk Your Life*	60 mins.
Common Hazards in the Workplace	Overview of common hazards and personal protective equipment Identify the personal protective equipment	40 mins.
Activity 2: Manual Handling	Activity: Safe Lifting Techniques Discussion questions	90 mins.
Activity 3: Electrical Hazards	Discussion questions	40 mins.
Activity 4: Maintenance & Safe Operation of Machinery	Discussion questions	45 mins.
Activity 5: Noise	Activity: How loud is it? Discussion questions	90 mins.
Activity 6: Hazardous Substances & Materials	Activity: Identify Chemical & Biological Hazards	90 mins.
Activity 7: Slips & Falls	Activity: Prevention of Slips, Trips and Falls Pamphlets and handouts	40 mins.
Activity 8: Managing Shift Work	Discussion questions Pamphlets and handouts	60 mins.
Activity 9: Stress	Discussion questions Pamphlets and handouts	60 mins.

Learning Activity

Activity 1: What is a hazard?

Specific learning objectives

- To understand worker rights and responsibilities in the workplace
- To understand employer rights and responsibilities in the workplace
- To evaluate hazardous materials and situations, and determine how to respond

Materials

- Background notes
- *Handout 1: Basic Safety Rules & Checklists*
- Video: *Don't Risk Your Life*
- *Handout 2: Discussion Questions for Don't Risk Your Life*
- *Handout 3: Using Your Senses to Identify Hazards*

Time: 60-90 minutes

Activity

The purpose of this activity is to help students become aware of their ability to affect the outcome of a potentially hazardous workplace situation. Students will use their evaluation skills to analyze a series of unsafe work practices and determine how to respond in a proactive manner to eliminate or control workplace hazards.

Students will be able to use the three steps to controlling a hazard to practice, evaluate, and respond to hazardous work situations.

1. Discuss background information with students. Ask students what they think a hazard is. Discuss responses and give students the proper definition for "hazard."

2. Ask students to describe a workplace where each of the hazard situations listed in the background notes may occur. Students can create a list of occupations and identify types of workplaces where hazardous situations may occur. This activity will help students connect hazardous situations to specific workplaces and occupations.

3. Distribute *Handout 1: Basic Safety Rules & Checklists*. Review and discuss the information in the handout. Ask students to bring and discuss safety rules and checklists they use in their part-time jobs. Discuss the three rights and remind students that they have a right to:
    - Receive safety training
    - Know what hazards exist in the workplace
    - Learn safe work practices

Students should also understand that they are responsible for acting and working safely in the workplace. For example, they are responsible for wearing personal protective equipment where required.

4. View the video, *Don't Risk Your Life.* Use discussion questions in *Handout 2* to discuss the messages in the video.

5. Use the background notes to provide a definition of "hazard" and discuss common types of hazards in the workplace. Review and discuss the three steps in controlling a hazard:

See It!	Recognize the hazard.
Think It!	Evaluate the hazard.
Do It!	Control (if you can't eliminate) the hazard.

6. Students should understand that they have an important role to play in responding to hazardous situations. This can be accomplished by giving students an opportunity to evaluate and react to hazardous workplace situations. Provide an activity where students can apply the three hazard control steps. Give your students descriptions or pictures of specific hazardous job situations and allow time to evaluate and respond as a group to each workplace situation.

   An alternative exercise is to have students look up pictures of people in various workplaces in magazines, newspapers and other print materials. Have students share ideas on possible hazardous situations in each workplace. Students can respond to the hazardous situations by applying the three hazard control steps.

7. Have students design a safety checklist that would apply to each specific workplace situation in the previous exercise.

Additional activity

Distribute *Handout 3: Using Your Senses to Identify Hazards*. Have students complete this handout and discuss their responses.

Evaluation

1. Observe students' participation in activities.

2. Assess students' responses and understanding of the objectives of the hazard recognition activities.

3. Evaluate safety checklists and written/verbal responses to hazard recognition activities.

The act & regulations

The following regulations apply to the information and activities covered in *Activity 1: What is a hazard*?:

- General duties of workers
- Employment of young persons
- Occupational Health Committees & representatives
- First aid
- General health requirements

Background notes

What is a hazard?

Staying safe at work means understanding hazards. What is a hazard?

Definition of a “hazard”

A hazard is **any activity, situation or substance that can cause harm**.

Hazards are divided into two broad categories: health hazards and safety hazards.

Some hazards are part of the work we do, for example, excessive noise, toxic chemicals, and mechanical equipment. Other hazards may be caused by the failure or misuse of equipment or machinery, electrical failure, chemical spills, and structural failures.

Some common hazards include:

- Slips, trips and falls - including falling objects, people falling from heights, slips and trips
- Manual handling - overexertion or repetitive movement
- Extremes of temperature
- Excessive noise
- Psychological stress, such as intimidation, violence, conflict or time pressure
- Hazardous substances such as acids or asbestos
- Electricity - electrical current or lightning
- Shift work
- Machinery and equipment - being hit, hitting objects, being caught in or between machinery or equipment
- Biological agents, such as bacteria and viruses

It's important to be able to identify hazards and to work with your employer to control them. It is your employer's responsibility to train new people to recognize a danger or risk. Risk is a function of severity, harm and likelihood of that harm occurring. A danger or risk is also called a hazard.

As a new worker, you might not feel comfortable asking your boss a lot of questions. If you don't ask questions and your employer doesn't train you to work safely, you won't be aware of the risks and will be more likely to have an incident. So **if you do not know or understand – ask!**

Knowing what to look for in the workplace will prevent injuries. When you can identify the hazards of your work and know how to correct or control them, injuries can be avoided. When knowledge of hazards is combined with a safe attitude, incidents will happen less often.

Workplace inspections/controlling hazards

Workplace inspections or “walkabouts” are an important part of a safety system. They help focus your attention on hazards in the work environment.

Hazard identification is an ongoing process.

Employers’/workers’ role in inspections

Occupational health and safety legislation requires employers to regularly examine any workplace they control. Many employers realize that workers are the people most familiar with workplace hazards. They designate workers and supervisors, after proper training, to carry out these inspections.

Workers should be encouraged to regularly inspect their tools, equipment and machinery. The operation of machinery should be preceded by a “pre-operational safety check.”

Types of inspections

To ensure health and safety, workplaces should be inspected regularly using daily and comprehensive inspections.

Comprehensive inspections – A comprehensive inspection is a systematic examination of the workplace. It involves evaluating the safety of all work areas, machinery, tools, equipment and work practices. Such inspections usually involve a checklist of some sort.

The "walkabout" is a comprehensive inspection. It should be used often to protect the health and safety of workers.

Daily inspection – These inspections are task-specific. They should include pre-operational safety checks on all the machinery to be used that day or work period.

The next three pages provide a systematic way to identify and control health and safety hazards.

A hazard control system

In Saskatchewan, anyone with responsibilities for health and safety must take every precaution reasonable in the circumstances to avoid harm or an offence to the law. This is called “due diligence.” It goes beyond what the legislation covers. One aspect of due diligence is recognizing and controlling hazards in the workplace.

The following steps are a simple, practical and effective way to recognize, assess and control hazards. The steps are useful for daily or comprehensive workplace inspections.

Step 1: See it!

A hazard is any situation, activity, procedure or equipment that may result in harm to a person. When spotting hazards, focus on all workplace tasks, equipment, substances and work procedures.

To help you “see” hazards in the workplace, keep the following in mind:

- Consider information from your family, neighbours, co-workers or employer about working conditions.
- Look for hazardous substances and unsafe conditions in the workplace.
- Ask about past incidents and near incidents in the workplace.
- Read any product literature and information from suppliers.
- Check out old, new, or unfamiliar equipment before using it.

Keep an eye out for hazards 24 hours a day, every day!

Step 2: Think it!

You should next determine the risk of harm from these hazards. This will help you decide which hazards should be taken care of immediately. Risk depends mainly on two factors:

- The probability of an incident – Is it likely or unlikely?
- The severity of the incident – Could it cause death, serious injury, or minor injury?

	Likely	Unlikely
Death & Serious Injury	**A**	**B**
Minor Injury	**C**	**D**

Classify all hazards you see as:

A, B, C or D.

Eliminate or control **A** hazards first.

Hazards can vary in their risk, depending on the experience, training, and physical and mental abilities of the individual.

Make sure you tackle the high-risk hazards with more urgency than the low-risk hazards.

Step 3: Do it!

There are several ways to control a hazard. You may be able to take care of some hazards right away – wipe up water spilled on the floor, put trash in the garbage bin or put supplies back in their proper storage spot.

You may not be able to take care of other hazards immediately. They will need to be reported to your supervisor or employer. In some workplaces hazards are also reported to the Occupational Health Committee (OHC) or the worker health and safety representative. You can also point out hazards to the committee or your employer when they do workplace inspections.

The employer will need to implement the most effective way to control the hazard. The employer will also need to provide workers with training about the hazard.

Three main ways to control hazards[1]

Hazard control should involve the following: Try 1 before 2, and 2 before 3.

1. Eliminate hazards!

Eliminate hazards posed by equipment and work processes at the source. For example, replace faulty equipment.

Eliminating hazards is the most desirable step in making the work environment safe.

2. Prevent or minimize exposure to the risk!

Prevent or minimize exposure to the risk by:

a) **Substitution** – Substitute a less hazardous material, process or piece of equipment to do the same task. For example, an employer could substitute a safer chemical for a hazardous chemical.

b) **Redesign** – Redesign the workplace, the equipment or work processes.

c) **Isolation** – Isolate the hazard. For example, in a deli the blade of a meat slicer has a metal guard.

These measures may include engineering controls. For example, use noise buffers or enclosures, ventilation to dilute the concentration of a hazardous substance, or guards to protect from cuts and puncture wounds.

3. Protect the workers!

Protect the workers if other controls are not feasible. Protect them through:

a) **Administrative controls** – For example, training, supervision, changing the pace of work, or rotating jobs. All workers should be trained in safe work procedures.

b) **Personal Protective Equipment (PPE)** – You should use proper clothes and masks for handling dangerous chemicals or biohazards.

[1] Adapted from a guide published by the WorkSafe Western Australia Commission.

Hierarchy of control	
Most preferred	**Eliminate!**
Less preferred	**Prevent or minimize exposure to the risk!** • Engineering controls • Substitution • Redesign • Isolation
Least preferred	**Protect the worker!** • Administrative controls • Personal protective equipment

The steps	What they mean
See it!	What is the hazard?
Think it!	Why is this a hazardous situation?
Do it!	What can be done to prevent an incident or injury?

Handout 1: Basic Safety Rules & Checklists

It's the law . . .

- Health and safety laws help protect you from workplace injury and illness.
- According to the law, it's **your employer's responsibility** to provide you with:
  - A safe and healthy workplace
  - General orientation and training
  - Training for your specific workplace and job
  - Initial and ongoing supervision
- Working safely is **your responsibility** too. You must:
  - Attend the workplace orientation
  - Follow required safety procedures and report hazardous conditions
  - Use personal protective equipment required by your employer
- In occupational health and safety legislation, workers have the right to:
  - Know potential and actual hazards in the workplace and how to deal with them
  - Participate in health and safety activities
  - Refuse work you believe to be unusually dangerous

Your health & safety checklist

When you start a new job, ask your supervisor or employer the following health and safety questions:

- What are the potential hazards of the job?
- Is job safety training available?
- What safety equipment do I need to do my job?
- Will I receive training on how to use the personal protective equipment (PPE) required for the job?
- What should I do in case of fire or another emergency?
- Where do I find fire extinguishers, first aid kits, first aid rooms and emergency assistance?
- What are my responsibilities regarding health and safety?
- If I notice something wrong, who should I report to?
- Who is responsible for answering safety-related questions?
- What should I do if I get injured or have an incident?
- How can I contact my health and safety committee or representative?

General workplace safety

Be aware of your own safety and that of others who work around you. Here is a general list of safety precautions you must observe **in most work areas**:

- The **right way** of doing your job is the **safe way**.
- Follow instructions.
- If you don't know or understand, ask!

Hazard awareness & recognition

- **Be in tune with your work environment.** Watch for hazards. Don’t allow yourself to be distracted by your cellphone or by listening to music while at work.
- **Develop good housekeeping habits.** Keep your workplace organized and eliminate clutter (for example, garbage, tools, electrical wiring or boxes that should be in storage) before it results in a trip (to the doctor) or a fall.
- Learn and follow safe procedures when handling or using electrical equipment and power cords.
- Do not distract a person using a machine or equipment or interfere with its operation.
- Use, store and dispose of hazardous materials or substances in a safe way. For example, office supplies with a chemical base, other chemicals, paints,

pesticides, wood or metal finishing compounds, asbestos, oily rags, biohazards such as used medical supplies or contaminated food products.
- Do not smoke in your workplace or work vehicle. There may be a fire or explosion hazard.
- Do not go to work if you are under the influence of medication, drugs or alcohol. You are a hazard to yourself, your co-workers and everyone around you.
- Walk, don't run, in work areas.

Personal protective equipment

- Make sure your clothing is appropriate for the tasks you have to do. No loose-fitting clothing that could get caught in machinery.
- Use personal protective equipment (PPE) if the job you're doing requires it. Ensure the PPE fits properly and is maintained.

Safe manual practices & ergonomics

- Do your work in a way that minimizes the stress on your body. Ask for an ergonomic assessment.
- Develop your **way of working** so that you:
  - Handle and use tools and equipment properly
  - Use correct posture
  - Work at a reasonable pace
  - Take suitable breaks
  - Use appropriate lifting aids (lifts, dollies, and so forth) to prevent back strain
  - Get training to do your job before you do it
- Develop your individual **workspace** so that you:
  - Have optimal body support when you work for an extended period of time (e.g. adjustable chair when seated, suitable footwear if standing or walking)
  - Can control ventilation, temperature and lighting to meet your needs
  - Can organize your workspace to do your job effectively
- Use safe practices when lifting and transferring objects from one place to another.
- Take regular breaks when doing tasks that require repetitive movements.

Safe operation & maintenance of equipment

- Understand the correct operating procedures and safety precautions before operating a piece of equipment or machinery. Use protective guards.
- Report defective or unsafe equipment to a responsible individual.
- Avoid the injuries faulty equipment can cause.

Fire regulations & equipment

- Learn the locations of all fire extinguishers, fire-pull stations and fire exits.
- Learn the fire drill procedures.

First aid

- Locate the nearest first aid facility and eye wash stations. Learn who the first aid attendant is.
- Report all incidents occurring in school to your teacher. Report workplace incidents to your supervisor and the Workers' Compensation Board.

Lockout procedures

You may work in an area where maintenance procedures are being carried out on powered machinery. At these times, detailed lock-out procedures are essential to prevent anyone from operating a machine that is being worked on and to prevent the unexpected energizing of a machine.

Lockout must involve more than merely disconnecting the power source. Workers have been killed by machinery that is dead electrically, but whose hydraulic systems were still functioning. The machines must be assessed thoroughly. All energy sources – electrical, pneumatic, hydraulic or gravitational – must be made inoperable, a state often called **zero mechanical state**.

Each maintenance worker should have his or her own lock and key (combination locks are not allowed). Only these locks should be used to lock out energy sources. The machine operator should be informed of maintenance plans, and the lock should be tagged to identify the maintenance worker who has locked out the machinery.

No one other than the maintenance personnel who place the locks and tags can remove them. Operators and other workers are strictly forbidden to remove either the tag or the lock.

These procedures apply not only to stationary industrial equipment but also to mobile equipment, including truck equipment, and heavy construction equipment.

Handout 2: Discussion Questions for *Don't Risk Your Life*

1. Why are 14 to 24 year olds most likely to be injured on the job?

2. Why do you think the young workers went ahead and performed the task?

3. How could the incidents in this video be prevented?

Handout 2: Discussion Questions for *Don't Risk Your Life*

(Teacher's copy)

1. Why are 14-24 year olds most likely to be injured on the job?

Some of the reasons 14-24 year olds are most likely to be injured on the job are:

- Try too hard
- Work too fast (to make a good impression)
- Unfamiliar with the workplace
- Don't understand the dangers of the equipment they are working with
- Don't report unsafe work conditions (because they don't want to make trouble)
- Take risks (because they don't believe anything could happen to them)
- Scared to speak up

2. Why do you think the young workers went ahead and performed the task?

- Wanted to show they could be useful, could do the job
- Wanted to make a good impression
- Reacted to authority (supervisor/trainer) figure

3. How could the incidents in this video be prevented?

Some ways the incidents could have been prevented:

- Getting safety training
- Wearing appropriate PPE
- Following correct work procedures
- Ensuring that your workplace is safe
- Knowing your responsibilities

Handout 3: Using Your Senses to Identify Hazards

You need your senses to help prevent injuries and incidents. Some hazards you can see with your eyes, others you can only smell or feel. You can taste some and hear others. For some hazards you can use more than one of your senses. Some hazards are invisible; you cannot see, hear, taste, smell or feel them.

Some words may belong with more than one sense.

Trip/fall	Dust	Fumes	Vapour
Broken bone	Bacteria	Air	Heat
Radiation	Knife	Electric shock	Smoke
Cold	Stress	Noise	Vibration
Pollution	Garbage	Oven cleaner	

See	Hear	Smell	Taste	Feel	Invisible

Handout 3: Using Your Senses to Identify Hazards

(Teacher's copy)

Hazard	Sense ( ) Indicates secondary sense(s) involved
Trip/fall	Feel (see, hear)
Broken bone	Feel (see, hear)
Radiation	Invisible
Cold	Feel (see)
Pollution	Smell (see, taste)
Dust	See (smell, taste)
Bacteria	Invisible (feel effect of bacteria)
Knife	See (feel)
Stress	Feel
Garbage	Smell, see
Fumes	Smell (taste, invisible)
Air	Smell (taste, invisible)
Electric shock	Feel (see, hear, smell, taste)
Noise	Hear (feel)
Oven cleaner	Smell (taste, see)
Vapour	See, smell
Heat	Feel (see)
Smoke	See, smell (taste)
Vibration	Feel, see

Common Hazards in the Workplace

Common hazards overview

A young woman worked at a fast food restaurant. She was told to clean the exhaust hood over the deep fryer. She was told to use a plank found in the back room. She complained to the manager that it was cracked. He told her not to worry since it had been used dozens of times without a problem. As she was working, the plank split, and she dropped into the hot oil almost up to her waist.

She went through a long, painful rehabilitation process and was not able to return to and complete school with her classmates.

(Case Study from Ontario Young Worker Awareness Program)

The following information is designed to help young workers improve their knowledge and understanding of occupational health and safety issues before they enter the workplace. You will learn how to follow workplace procedures and instructions for risk control in areas such as:

- Manual handling
- Electrical hazards
- Maintenance/safe operation of machinery
- Noise
- Hazardous substances
- Slips and falls
- Managing shiftwork
- Stress, harassment, violence

This information will help you understand occupational health and safety hazards and laws. It provides some practical solutions to common safety and health problems in the workplace.

The Saskatchewan Employment Act and *The Occupational Health and Safety Regulations, 2020* requirements for each workplace hazard activity are referenced at the end of each activity.

Common Forms of Personal Protective Equipment

Most common forms of personal protective equipment (PPE) require certification that they meet certain standards. This does not mean, however, that the equipment will provide complete protection from hazards.

- **Hard hats** help protect the head. The best hard hats incorporate lateral impact protection into their design to help protect the worker from blows to the side of the head and reduce electrical shock.
- **Ear muffs and ear plugs** are the two basic types of hearing protection. Ear plugs tend to be more comfortable and are better suited to those workers who need to work a full shift with hearing protection. Ear muffs are easier to put on and remove. They are better suited to workers moving in and out of noisy areas.
- **Boots** are used to protect feet. Special shoes or boots are available with steel toes, but protection doesn't end there. There are boots designed to help protect workers from more specific hazards (e.g., wet conditions, electrical shock, chemicals, extreme temperatures or slippery floors).
- **Protective gloves** come in hundreds of special types to help protect workers. Each has its own properties and applications.
- **Respiratory equipment** is essential when workers are exposed to toxic materials or where oxygen is lacking. It ranges from simple filtration masks to self-contained breathing apparatus.
- **Back support belts** have mixed medical reviews. They may help prevent some forms of strain; at the same time they pose their own risks to the wearer. Long-term use of back belts isn’t recommended.
- **Fall protection** is a critical issue for many workers. Examples of fall protection equipment include guardrails, safety nets and harnesses that reduce the chance of falling and of injury due to falls. Safety belts or lines and anchors that restrict a worker's movement and likelihood of falling form the basis of other fall protection systems.
- **Chemical protective clothing** is used to help protect the worker from harsh chemicals. It offers limited protection and should not be worn for extended periods as the chemicals may eventually penetrate the material.
- **Goggles, visors or safety glasses** are used to help protect the eyes from a variety of hazards such as sparks, flying objects, or particular forms of light.

Cartridge respirator and safety goggles

Hard hat, safety goggles and work gloves

Face shield

Safety boots (CSA approved)

Hearing protection, hard hat, and safety goggles

Identify the personal protective equipment

Have students identify the personal protective equipment indicated in the picture and describe why it is used. Ask them to name occupations that would require this equipment. For example, occupations in the construction sector (carpentry, electrical, and welding) and occupations in the automotive industry (mechanics and manufacturing). If possible, bring samples of PPE for students to see and try on.

Point out to the students the importance of using PPE that has been approved by the Canadian Standards Association (CSA). Approved PPE guarantees a reasonable level of personal protection. Approved equipment will be marked with the sign of the CSA.

Personal protective equipment regulations

The general responsibilities of employers and workers regarding the provision and use of PPE are listed in Part 7 Personal Protective Equipment. For example *Regulation 7-2 General responsibilities* in *The Occupational Health and Safety Regulations, 2020.*

Learning Activities

Activity 2: Manual Handling

Specific learning objectives

- To introduce the concept of manual handling
- To discuss activities that involve moving objects and how the activities are done
- To demonstrate the steps in correct (proper) lifting and discuss the need for proper lifting techniques

Materials

- Background notes
- *Handout 4: Diagram & Description of Safe Lifting Techniques*
- *Handout 5: Basic Things to Think About When Manual Handling*

Time: 60 minutes

Activity

1. Demonstrate safe lifting techniques and compare to unsafe methods.

2. Distribute *Handout 4: Diagram & Description of Safe Lifting Techniques*.

3. Have students demonstrate safe lifting techniques using various materials and equipment in the classroom or shop.

4. Review and discuss basic safe work procedures when manual handling using *Handout 5: Basic Things to Think About When Manual Handling*

Evaluation

1. Observe students' participation in activities.

2. Assess students’ responses and understanding of the objectives of the hazard recognition activities.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 2: Manual Handling*:

- Lifting and handling loads
- Standing and sitting
- Musculoskeletal injuries

Background notes

In just about any job, there will be a situation that involves **manual handling.** Manual handling is not just about lifting heavy objects. It includes any activity requiring the use of force exerted by a person to **lift, lower, push, pull, slide or hold** objects.

Placing boxes and other items on shelves, painting, operating levers on machinery, writing, keyboarding, and working with tools are some examples of manual handling tasks.

Improper techniques used in manual handling can result in injuries such as:

- Strains and sprains
- Neck and back injury
- Slips, falls and crush incidents
- Cuts, bruises and broken bones
- Hernias
- RSI (repetitive strain injury)

People who suffer from a manual handling injury at work may spend the rest of their lives coping with pain and unable to do a lot of the things others can do. Young workers are more likely to be injured by manual handling because their bodies are not fully developed and are less able to cope with the stresses and strains.

When you manually handle an object, your balance, your line of sight and your reactions will be affected. The load may block your vision of a step. You may trip and not be able to use your hands to balance or block your fall. You can be injured if you fall while handling a load or if you drop the load onto yourself.

Fatigue also contributes to the chance of injury. Your muscles become weaker over a period of use and reaction time slows. You won’t be able to move as well or as fast as you could when you started.

Ergonomics in the workplace

Ergonomic hazards refer to workplace conditions that pose a bio-mechanical stress to the worker. Such hazardous workplace conditions include, but are not limited to:

- Faulty work station layout
- Improper work methods
- Improper tools
- Excessive tool vibration

They also include job design problems that include aspects of:

- Workflow
- Line speed
- Posture and force required
- Work/rest regiments
- Repetition rate

Examples include having workers perform repetitive movements, maintain fixed positions, overload muscles or maintain awkward body positions.

A significant percentage of lost-time injuries (those which cause the worker to miss time from work) are due to ergonomically poor job and workplace design. These conditions result in injuries to the back, shoulders, neck, elbows, wrists and vision. Many of these injuries are painful and long-lasting.

Activities in the workplace that can cause strains and sprains, such as back injuries and repetitive strain injuries (RSI) include:

- Moving or lifting heavy objects
- Working in awkward positions for long periods of time
- Using repetitive motions

You can learn to recognize symptoms of RSI. Repeated uncomfortable postures and tasks can cause injury. Avoid injuries by:

- Using better designed work tools and workstations
- Eliminating awkward postures which can cause fatigue and reduce concentration
- Using positioning aids to put yourself in a stable, comfortable posture
- Avoiding working in one position for long periods of time

Most manual handling injuries to young people can be prevented with instruction, training, and supervision. Employers should prepare safe work procedures, with the help of workers, to care for the special needs of young and inexperienced workers.

It is the employer's responsibility to provide you with safe work procedures as well as instruction, training and supervision for your manual handling tasks.
You should be informed and trained in:

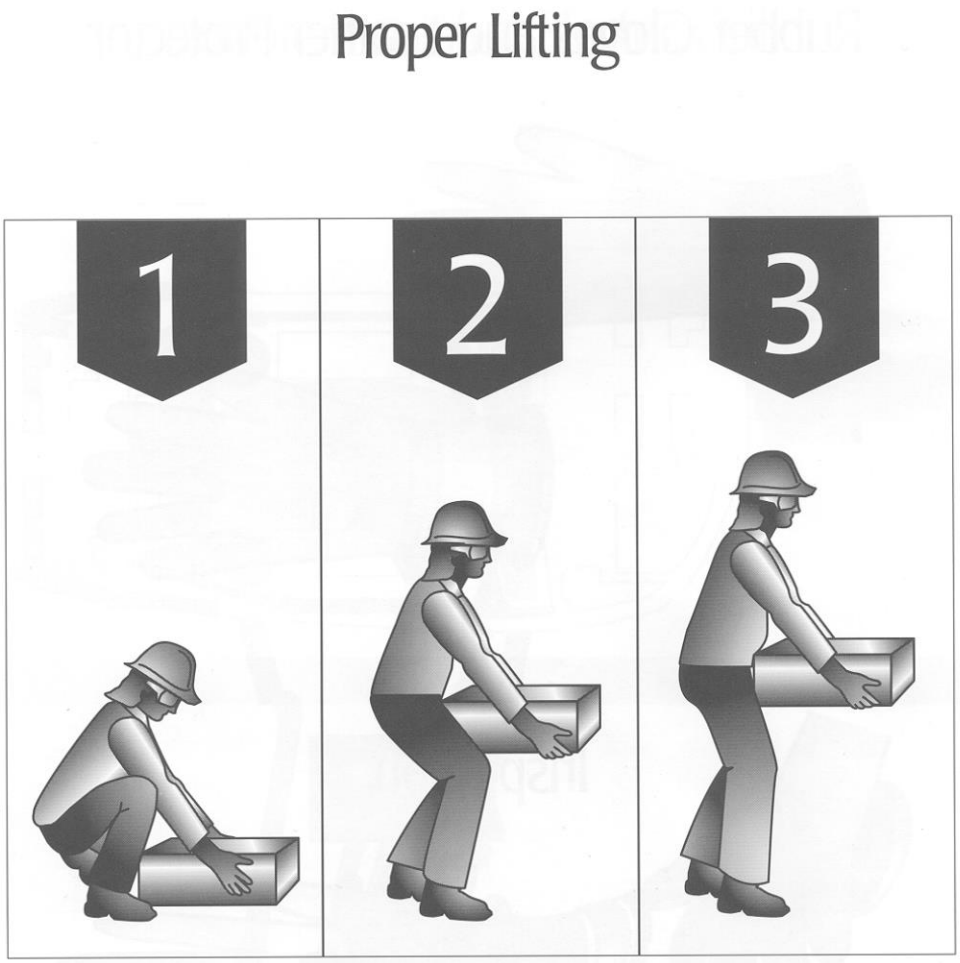
- Safe manual handling methods
- Identifying specific manual handling hazards
- Safe work procedures and using manual handling aids
- Exercising your right to ask for help

Even though you may be young and a new worker, you have a responsibility to speak up if you feel your job is too heavy, too difficult, too tiring or puts you at risk of injury.

Ways to reduce the risk:

- Lighten loads (break loads into smaller quantities).
- Do not put items on the floor that will have to be picked up later. Why move something three times if you only have to move it once?
- Use steps to reach or place items on high shelves.
- Reduce reaching, bending and twisting movements.
- Do not manually handle a load that can be moved mechanically. Use a lifting aid for heavy objects.
- Protect your hands and feet in case the load falls.
- Prevent muscle strain and fatigue. This includes warming up before working, taking time for rest breaks, and taking time to gradually get used to a new job.
- Ask for help when you need it. For example, use two or more people.

Handout 4: Diagram & Description of Safe Lifting Techniques



Lifting exercise

When you bend down to pick something up, follow these simple steps:
(Select an item in the classroom for demonstration purposes.)

1. Place your feet apart for good balance.
2. Bend your knees.
3. Keep the load close to the centre of your body.
4. Lift gradually, smoothly and without jerking.
5. Do not twist your back while lifting, but pivot with your head.
6. Co-ordinate your lift when working with a partner.
7. Don’t lift beyond safe weight limits.

Handout 5: Basic Things to Think About When Manual Handling

Your lower back is stressed most by bending, twisting, lifting, pushing, pulling and carrying. Injury occurs when the demands on the joints, discs, ligaments and muscles trying to hold your spine together are too great.

Consider how your job is designed.

- What's the amount of weight lifted?
- How much lift is required? (i.e., from "how low" to "how high")
- How far is it necessary to carry the load?
- How much will your body twist with how much weight?
- How often will you have to lift this load?
- How long will it be necessary to sit?
- Is the chair designed for erect and comfortable posture?
- What about the work surface height and tilt? Does it allow for erect posture?
- How much bending is necessary? How far, how often, how long?

Use proper lifting rules.

- Tuck in your chin.
- Keep the load close to your body.
- Position your feet before you lift to reduce twisting with the load.
- Lift with your legs.
- Don't lift beyond your safe limits!

Follow proper ergonomic rules for sitting.

- Keep your feet flat on the floor, or use a foot rest for support.
- Don't have space between the back of your knees and the front of your chair.
- Make sure the back of your chair supports your back.

Let your back recover from the stress of work.

- Frequently stretch out of your position.
- Do one or two simple stretches at least once every hour.

Summary

Consider three basic things to prevent muscular fatigue and injury on the job:

1. Design work tasks properly.
2. Use your body properly to do the job, doing the right things to take care of your body.
3. Respect personal limitations. Ability to move things varies based on age, strength, body development, health and ability to deal with fatigue.

Activity 3: Electrical Hazards

Specific learning objectives

- To understand that there are electrical hazards in the workplace
- To use safe work procedures when working with electrical equipment

Materials

- Background notes
- *Handout 6: Discussion Questions for Electrical Hazards*

Time: 40 minutes

Activity

1. Review and discuss basic safe work procedures and background information for working with electricity. Distribute *Handout 6: Discussion Questions for Electrical Hazards.*

2. Discuss the different types of personal protective equipment (PPE) available and specific safety gear to be used when working with electricity. The teacher could show specific PPE and pass it around for students to try on and become familiar with.

3. For example, workers must wear a special hard hat that is of adequate dielectric strength if there is a possibility that they may come in contact with an exposed energized electrical conductor. Workers who may contact an exposed energized high voltage electrical conductor must wear approved rubber insulating gloves and mitts, and approved rubber insulating sleeves.

4. Only competent, certified workers will do the actual work with electricity. However, all workers need to be aware of general hazards and safe work procedures.

5. Have students draw a plan or blueprint with the following information in the event of an emergency:

    - Escape route in case of incident
    - telephone locations
    - Emergency telephone numbers
    - Fire extinguisher locations

    Each student could do a plan and share it with the group or the plan could be developed as a group activity. In cases of electrical fires, only an extinguisher approved for Class C fires is suitable.

Evaluation

1. Observe students' participation in activities.

2. Assess students’ responses to discussion questions and their understanding of the objectives of the electrical hazard information and activities.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 3: Electrical Hazards*:

- Part VII: Personal protective equipment
- Part XXX: Additional protection for electrical workers
- Regulation 139: Lock-out procedures

Background notes

Most jobs today involve the use of electricity. Tools used in the workplace may require high voltage power for heavy industrial equipment or low voltage power for small power tools such as drills and screwdrivers. Batteries are also considered low voltage power.

When we use electricity, we need to take added precautions to deal with electrical hazards. There are several hazards associated with electricity. **Electrical** shock is one hazard that almost everyone has experienced. Electrical shock occurs when electricity enters your body and you become part of an electrical circuit. The electrical current detours from the intended circuit and flows through you to the ground.

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**.

Electric shock occurs when a person becomes part of an electrical circuit and the current flows through their body. A fatal shock is called electrocution.

Contact with overhead wires commonly causes electrocution. This can occur when people carry ladders or use equipment that is high enough to come into contact with electrical wires. Farm workers are at serious risk of injury and electrocution when moving farming equipment under or near overhead wires. Contact with underground services happens when the ground is disturbed, usually by heavy equipment, and underground services such as power or gas are severed.

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

Grounding

Incidents and deaths can also result when equipment becomes "live" due to electrical faults, lack of maintenance or short circuiting.

When you work with electrical equipment, the current may leak. If electrical wires or equipment are damaged, parts that are not meant or designed to carry electricity can become “live.” When you contact the “live” equipment or wire, you become 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 in the workplace. It should also be provided for the entire electrical system at the job site.

The third prong in all portable tools and extension cords supplies grounding. Check to ensure the equipment you use has one. Don’t remove the third prong from equipment or cords.

Electrical incidents are most often caused by a combination of factors such as:

- Lack of training
- Lack of supervision
- Inadequate work practices
- Poorly maintained equipment or installation
- A hazardous workplace environment

Doing maintenance work on live electrical circuits is a frequent cause of electrocution.

Locking out equipment

This is a way of preventing machinery or electrical current from becoming operational during maintenance. A lock is attached to the machine switch so that it can't be turned on.

The person working with the machine should hold the only key to the lock. A lock must only be removed by the person who attached it to the equipment or machinery. Procedures must be established for the removal of the lock should the person not be available (e.g., if there has been a change of shift workers).

When working with equipment:

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

In all cases:

- Never use water on an electrical fire.
- Be aware of the location of overhead and underground lines.
- 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.
- Review the operation manuals for all electrical equipment before using it.
- Don't make repairs on equipment unless you are a certified electrician.

Personal protective equipment (PPE)

Rubber soled shoes, rubber gloves and non-conductive head protection help reduce the effects of electrical shock. Metal jewelry will conduct an electrical current to you. Leave your jewelry at home! Clothes made of cotton are less likely to burn.

Always respect electricity!

> 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 synthetic clothing. An electrical short created a ball of fire that hit the bucket. Both workers suffered burns and their clothes caught fire. The cotton-clad worker was discharged from the hospital the same day. The worker wearing synthetics was hospitalized and treated for severe burns. He was not discharged for three months.
>
> Workers' Compensation Board, Northwest Territories, 1996

PPE is provided as part of the third line of defense to protect workers from workplace hazards. Workers are protected through the use of safe work procedures, effective safety training, proper supervision and the use of PPE.

PPE is used when it is not practical to:

a) Eliminate hazards posed by equipment and work processes
b) Control the hazard by using machine guards, noise buffers or enclosures, or ventilation to reduce the risk to workers (for example)

PPE is the most common way of trying to control a hazard at the worker level. Workers are provided with equipment such as masks, respirators, gloves, safety boots, protective clothing and hearing protection.

Handout 6: Discussion Questions for *Electrical Hazards*

1. Describe how an electrical shock affects your body.

2. What may happen if you have an electrical shock while standing on a ladder?

3. What does grounding do?

4. Repairs can be made to electrical equipment when it's locked out. Describe this procedure and explain why equipment should be locked out.

5. What types of personal protective equipment and clothing should you wear if you work with electricity?

Handout 6: Discussion Questions for *Electrical Hazards*

(Teacher's copy)

1. **Describe how an electrical shock affects your body.**

    - Electrical shock can affect your breathing, heart, nerves and muscles.
    - It can shut down or "blow the fuses" in your body.
    - When your body's fuses are blown, the heart can stop beating and you can stop breathing.
    - A fatal shock is called electrocution.

2. **What may happen if you have an electrical shock while standing on a ladder?**

    - It can cause electrocution.
    - A person may fall from the ladder and further injuries may result.

3. **What does grounding do?**

    Grounding provides a safe pathway for electricity to travel from the equipment or circuit to the ground, preventing shock.

4. **Repairs can be made to electrical equipment when it's locked out. Describe this procedure and explain why equipment should be locked out.**

    A lock is attached to the switch(es) on equipment or machinery before maintenance or repair. The equipment can't be turned on and remains inoperable while the worker is conducting maintenance or repairs. In this situation, the equipment can't be started accidentally and no one gets hurt.

5. **What types of personal protective equipment and clothing should you wear if you work with electricity?**

    - Rubber soled shoes
    - Rubber gloves
    - Non-conductive head protection
    - Cotton clothes

Activity 4: Maintenance & Safe Operation of Machinery

Specific learning objectives

- To recognize that all machinery (hand or powered) is hazardous (i.e., it has the potential to injure the user and others nearby
- To know that hazards include being hit by objects from the machinery, heat, noise, fumes or chemicals; injuries include amputations, fractures, strains and sprains, dislocations, crush injuries, open wounds, electrocution, and so forth
- To understand the maintenance needs and safe handling of machinery
- To recognize the importance of guards (during regular use of machinery) and lock-out procedures (while doing maintenance) and use them
- To follow the lock-out procedures specific to each workplace
- To wear personal protective equipment (PPE) while working with or near equipment and machinery

Materials

- Background notes
- *Handout 7: Discussion Questions for Maintenance & Safe Operation of Machinery*

Time: 45 minutes

Activity

1. Review and discuss basic safe work procedures in the background notes on working with machinery.

2. Distribute *Handout 7: Discussion Questions for Maintenance & Safe Operation of Machinery*. Discuss students' responses to the questions.

Evaluation

1. Observe students' participation in activities.

2. Assess students’ responses to discussion questions and their understanding of the objectives of the maintenance and safe operation of machinery hazard information.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 4: Maintenance & Safe Operation of Machinery:*

- Personal protective equipment
- Machine safety
- Safeguards, storage, warning signs and signals

Background notes

A wide range of mechanical equipment is used in the workplace. Safe handling procedures are required to safely operate this machinery. Mechanical equipment includes machines that are very large in size down to those that are hand-held. Some machines use power while others do not; all have the potential to harm the user. Examples include grinders, presses, hand hammers, lift trucks, cranes, derricks, hoists, robots and other automatic equipment.

Mechanical equipment can cause:

- Sprains and strains
- Open wounds
- Fractures
- Crush injuries
- Amputations
- Electrocution
- Death

Your workplace should have a maintenance program to ensure that all equipment and machines work safely.

The most common mechanical equipment injuries are to hands and fingers which may be cut, sprained, dislocated, broken, crushed or severed by machinery or tools. These injuries can cause lengthy periods of time off work and sometimes permanent disability. **Eye injuries** caused by mechanical equipment incidents in the workplace include:

- Being hit by an object (this includes small particles, such as metal shavings, and large objects such as pieces of equipment)
- Heat, radiation
- Hitting an object
- Falls, trips, and slips

Personal protective equipment (PPE)

Employers are required to provide PPE and clothing for workers when hazards in the workplace cannot be eliminated.

PPE and clothing used in the workplace can include such things as eye protection, hearing protection, protective gloves, safety footwear, arm guards, respirators and safety hats. Workers should be instructed and trained in the correct use of the PPE provided by the employer.

After receiving training, workers are required to use the PPE supplied by the employer and follow all safety instructions.

Guards

Guards in the workplace range from sophisticated light guards to physical barriers attached to machinery to protect you from its moving parts. Guards:

- Protect you from the moving parts of equipment
- Prevent flying objects, such as metal chips, from hitting you
- Keep hazardous substances from contacting you
- Turn off power to machinery
- Lower the amount of noise
- Physically push your hands out of the way
- Require both hands to operate the controls before the machine will work

Keep all guards in place. If guards are removed during cleaning, make sure they are replaced. Do not start or operate machinery during cleaning.

Locking out

Locking out is important. If you are cleaning or repairing the machine and it's turned on unexpectedly, you will probably be seriously injured. If a machine is locked out, after you cut off the power supply, the machine cannot be turned on by someone else.

The steps required for ensuring a safe lock out of equipment vary from one company to another, and from one machine to another. The employer must provide written lock-out procedures and ensure that workers follow them. Before working on machinery, make sure you have the training, tools and equipment you need. Follow the employer's lock-out procedures at all times.

“Danger” & “Out of Service” tags

Tagging machinery that’s out of service or being repaired is another preventive 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 placed them on the machinery yourself. Follow proper procedures for restarting the equipment.

Generally, workers should not work alone with machinery unless it has “deadman” switches. Electrical vehicles often have this kind of switch. It is designed so that if the driver releases pressure on the switch (handle or pedal), the current is cut off and the machine ceases to operate.

If a worker must work alone, the machine's controls should be clearly marked so another person, who may not be familiar with the machine, could easily turn it off in an emergency.

Handout 7: Discussion Questions for *Maintenance & Safe Operation of Machinery*

1. What is the function of guards on equipment?

2. Machines often have guards, but workers don't use them. Why? Why not?

3. What is meant by "locking out" equipment?

4. Who is responsible for restarting machinery after it has been locked out?

Handout 7: Discussion Questions for *Maintenance & Safe Operation of Machinery*

(Teacher's copy)

1. **What is the main function of guards on machines and equipment?**

   The main function of guards is to protect you from the moving parts of machines or equipment.

   Guards protect by keeping you away from moving parts, by preventing flying objects from hitting you, by turning off the power and by lowering the amount of noise, etc.

2. **Machines often have guards, but workers don't use them. Why not?**

   Possibilities: easier if you don't use them, takes more time when you use them, or workers may think they won't get injured.

3. **What is meant by "locking out" equipment?**

   It means that you make sure that the equipment or machine can't be started by someone else while you are cleaning or repairing the machine.

4. **Who is responsible for restarting machinery after it has been locked out?**

   The person who locked it out.

Activity 5: Noise

Specific learning objectives

- To introduce noise as a hazard in the workplace
- To recognize damaging noise levels at home and in the workplace
- To develop an awareness that since there is often no pain involved in hearing loss, people are not aware it is happening

Materials

- Background notes
- *Handout 8: How loud is it?*
- *Handout 9: Discussion Questions for Noise*
- *Handout 10: What is too loud?*
- *Handout 11: What is too loud on the farm?*

Time: 90 minutes

Activity

1. Discuss the information in the background notes with students. Distribute *Handout 8: How loud is it?* and have students complete the exercise. Discuss the results and provide the correct responses.

2. Have students complete *Handout 9: Discussion Questions for Noise* and discuss the answers.

3. Distribute the true/false review test, *Handout 10: What is too loud?* Have students complete the test. Discuss the correct responses. Ask the students: "What will you personally do to protect your hearing?"

4. Depending on your community and the needs of your students, *Handout 11: What is too loud on the farm?* may be used to discuss hearing hazards specific to farming.

Evaluation

1. Observe students' participation in and responses to activities. Assess students' responses to discussion questions and understanding of the objectives of the noise hazard information.

2. Assess the review test.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 5: Noise*. They refer to the requirements of employers and workers in the workplace and are listed in section five of this module under the following headings:

- Personal protective equipment
- Noise control and hearing conservation
- Noise reduction through design, construction of buildings

Background notes

You are exposed to different sounds in the workplace. You may be annoyed by some sounds, but they may not hurt your hearing. Some sounds such as music may be pleasurable, but can still cause hearing damage.

Long-term exposure to noise above 85 dBA (A-weighted decibels) for eight hours a day will result in permanent hearing loss. Short-term exposure to high noise levels (over 85 dBA) can also result in permanent hearing loss.

Research from industry and studies on animals indicate that prolonged exposure to sound over 85 dBA can cause **permanent hearing impairment**. The more intense the noise, the less the exposure time needed to receive a damaging dose. Environmental sounds in our society now run dangerously close to the damaging level. With this level of commonplace environmental noise, people adjust their radios and other audio equipment higher to hear at a more comfortable and pleasurable volume. The danger is that the "new" comfort level tends to be greater than 85 dBAs. Over time, this will result in permanent hearing loss.

When someone loses their hearing, it can devastate them and make it difficult for others around them. People with poor hearing can be left out of conversations and social activities. **Hearing loss** can also cause people to become less efficient at work and study. In the workplace, people with a hearing loss can become hazards because they may miss instructions or not hear a fellow worker's warning.

Hearing loss may happen quickly, or it may happen so slowly that the loss is not noticed. The loss may be permanent, or it may be temporary. If you have **temporary hearing loss**, your hearing will return after you are away from loud noise for a period of hours. **Permanent hearing loss** may occur if you are exposed to loud noise for a period of months or years. In permanent hearing loss, the damage done to the nerve endings of the inner ear is permanent.

You should consult regulations regarding the noise exposure limits applicable to your workplace. Ask a supervisor to arrange to have the noise level checked.

It's too noisy if . . .

- Someone standing a metre away from you needs to speak loudly or shout to be heard
- You hear a "ringing" or "buzzing" in your ears after being in a noisy environment
- You need to turn the volume up to hear the radio or television when others appear to hear adequately
- You fail to hear background noises such as a ringing telephone or doorbell
- Your hearing seems to be better at the start of the day than at the end

It is the **responsibility of your employer** to provide the correct personal hearing protectors. Personal hearing protectors (ear muffs and earplugs) should be used as a temporary measure or as a last resort.

Every effort should be made to reduce noise at the source. This is #1 in the hierarchy of controls: eliminate the hazard.

Sound is measured in decibels (dBA). Conversation registers at 60 decibels; a rocket launching measures as high as 180 decibels. An increase in noise by three decibels means that the noise has doubled in loudness (intensity).

If you are in a workplace where you are exposed to noise that averages 85 decibels or more, then you should take precautions to prevent loss of your hearing.

If you think your work or home environment is too loud, there are steps you can take to control or eliminate the risk:

- Test the noise level by standing at arm's length from someone and talk to them. If you have to raise your voice to be heard, the noise is probably excessive. If your ears ring or sounds seem muffled after a noise stops, your hearing has been affected, at least temporarily.
- Under *The Saskatchewan Employment Act*, employers must ensure worker's daily exposure to noise is no higher than 85 dBA Lex (level of noise averaged over an eight-hour day).
- The first step is elimination. Eliminate the noise source if possible; if it isn't possible, protect yourself.
- Employers should conduct a noise exposure survey in noisy workplaces to identify all noisy areas, equipment and tools.

When possible:

- Purchase equipment that is less noisy
- Re-engineer machinery to make it less noisy
- Surround machinery with a sound-muffling enclosure

Employers should provide hearing protection to workers. Signs should be posted to remind workers to wear the equipment.

Some people resist using hearing protection because they are concerned they will miss important words or instructions. They should be aware that voices are still clearly audible when wearing earplugs. Earplugs simply block out background noise.

There are three ways to deal with noise hazards:

- **At the source** by redesigning the equipment to reduce noise or using another type of equipment
- **In the pathway** by using sound barriers, enclosing the noisy equipment or rotating the workers from noisy areas.
- **Control at the worker level** with different types of personal protective equipment to protect your hearing. When choosing the protection you will use, make sure the equipment is comfortable and fits with any other equipment necessary on the job. Hearing protectors include earmuffs that fit over the ears and inserts that fit into the ears. Some inserts are disposable and can fit anyone's ears; others must be fitted to a particular user's ears.

Summary

- Hearing protectors should be maintained and cleaned regularly. Worn or damaged parts should be replaced.
- Don’t share earplugs: ear infections can be passed from another worker to you.
- Protectors should be kept near the area of noisy activity.
- Headphones for iPods and smartphones do not provide good protection from noise.
- People do not become "used" to noise. It only seems that way because of hearing loss.

Lost hearing is gone forever.

Handout 8: How loud is it?

Estimate the noise level of the following sounds and record your response in the space provided.

Common sounds & noise levels	
Rustle of leaves	___ dBA
Conversation	___ dBA
Refrigerator	___ dBA
Noisy restaurant	___ dBA
Busy traffic	___ dBA
Alarm clock	___ dBA
Live rock music	___ dBA
Stereo headphones (1/2 volume)	___ dBA
Symphony concert	___ dBA
Jackhammer	___ dBA
Motorcycle	___ dBA
Screaming child	___ dBA
Workplace noise levels in some occupations	
Drywaller	___ dBA
Material/equipment mover	___ dBA
Labourer	___ dBA
Carpenter, framer	___ dBA
Concrete worker	___ dBA
Ironworker	___ dBA
Welder	___ dBA

Handout 8: How loud is it?

(Teacher's copy)

Estimate the noise level of the following sounds and record your response in the space provided.

Common sounds and noise levels	
Rustle of leaves	20 dBA
Conversation	60 dBA
Refrigerator	50 dBA
Noisy restaurant	70-75 dBA
Busy traffic	75-85 dBA
Alarm clock	80 dBA
Live rock music	90-130 dBA
Stereo headphones (1/2 volume)	93-108 dBA
Symphony concert	80-110 dBA
Jackhammer	100 dBA
Motorcycle	100 dBA
Screaming child	90-115 dBA
Workplace noise levels in some occupations	
Drywaller	89 dBA
Material/equipment mover	91 dBA
Labourer	91 dBA
Carpenter, framer	91 dBA
Concrete worker	92 dBA
Ironworker	93 dBA
Welder	95 dBA

Handout 9: Discussion Questions for *Noise*

1. What is the difference between permanent and temporary hearing loss?

2. What are the early signs of hearing loss?

3. What is really happening when people “get used to” a noise?

4. What are the three ways to deal with noise hazards? Give an example of each.

Handout 9: Discussion Questions for *Noise*

(Teacher's copy)

1. **What is the difference between permanent and temporary hearing loss?**

   Temporary: your hearing returns after you have been away from loud noise for a period of hours.

   Permanent: the damage to the nerve endings of the inner ear is permanent, so your hearing will not return even when you are away from the loud noise for a period of time.

2. **What are the early signs of hearing loss?**

   Some signs of hearing loss are when:

   - Someone standing a metre away from you needs to speak loudly or shout so you can hear them
   - You hear a "ringing" or "buzzing" in your ears after being in a noisy environment
   - You need to turn the volume up to hear the radio or television when others appear to hear adequately
   - You fail to hear background noises such as a ringing telephone or doorbell
   - Your hearing seems to be better at the start of the day than at the end

3. **What is really happening when people "get used to" a noise?**

   Hearing damage has started.

4. **What are the three ways to deal with noise hazards? Give an example of each.**

   At the source: Redesigning the equipment to reduce noise or using another type of equipment

   In the pathway: Sound barriers; enclosing the noisy equipment; rotating the workers from the noisy areas

   Control at the worker level: There are many different types of personal protective equipment that you can 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 ear muffs that fit over the ears and inserts that fit into the ears. Some inserts are disposable and can fit anyone's ears; others must be fitted to a particular user's ears.

Handout 10: What is too loud?

Circle true or false.

1. Loud noise is a leading cause of hearing loss.	T	F
2. Loud noise damages the nerve endings in the inner ear, which results in hearing loss.	T	F
3. The most rapid damage to hearing happens in the first five to 10 years of exposure to loud noise.	T	F
4. Noise-induced hearing loss is permanent.	T	F
5. Noise is measured in decibels (dBA). Noise less than 85 dBA isn't hazardous.	T	F

Handout 10: What is too loud?

(Teacher's copy)

Circle true or false.

1. Loud noise is a leading cause of hearing loss.	**T**	F
2. Loud noise damages the nerve endings in the inner ear, which results in hearing loss.	**T**	F
3. The most rapid damage to hearing happens in the first five to 10 years of exposure to loud noise.	**T**	F
4. Noise induced hearing loss is permanent.	**T**	F
5. Noise is measured in decibels (dBA). Noise less than 85 dBA isn't hazardous.	**T**	F

Handout 11: What is too loud on the farm?

Studies show that farmers have poorer hearing than the general population. A high percentage of farmers show signs of excessive noise exposure. People who operate farm equipment for extended periods of time require special protection.

Exposure to 85 decibels or less for an eight-hour day is considered "safe" for most people. Exposure to "loud noises" for extended periods of time can cause damage to the inner ear that is irreversible even with medical or surgical techniques. Even short exposure to noise exceeding 85 decibels is hazardous and may cause permanent damage.

Your environment is too noisy if . . .

- A person standing a few feet away from you must talk very loudly or even shout to be heard.
- You sometimes feel a "ringing" or a "buzzing" in your ears after a few hours of being in a noisy environment.
- On returning to your room after a break, you find the TV is on full blast.

Reducing the noise level at the source provides the best hearing protection.
The second best alternative is wearing personal protective equipment (PPE) and maintaining it.

Ear muffs offer the highest attenuation (sound reduction). They are fairly comfortable and come in a variety of types, materials and sizes (Colours too – try hot pink for a fashion statement!).

Preferred in moderate noise, **ear plugs** do not supply enough protection for high intensity noise. Most ear plugs are designed as disposable. After using them once, you should throw them out (just like dental floss). Cotton batting and earphones won't protect you adequately.

Inspect and clean reusable plugs daily. Most disposable plugs should be discarded at the end of the day. Inspect the seals on ear muffs and replace them as required. Ultraviolet light causes deterioration of the plastic and foam components of most muffs.

People often underestimate the importance of wearing protective equipment because the damage happens so gradually there is no dramatic experience. For this reason, farm workers should pay special attention to the dangers of excessive noise before permanent hearing loss results.

Questions for *What is too loud on the farm?*

1. Studies have shown that farmers have:

    a) Better than average hearing
    b) Average hearing
    c) Poorer than average hearing

2. What is considered a safe noise level?

    a) 85 dBA per week
    b) 8.5 dBA per hour
    c) 85 dBA or less for eight-hour day

3. The most effective method for hearing protection is:

    a) Wearing earphones
    b) Reducing the noise at the source
    c) Turning your equipment off when you feel a "ringing" or buzzing in your ears

4. Hearing loss:

    a) May be temporary or permanent
    b) Happens gradually with no dramatic experience
    c) Can sometimes be regained
    d) All of the above

5. For protection against moderate noise exposure:

    a) Ear muffs are recommended.
    b) Ear plugs are adequate.
    c) Cotton batting could be used.

6. Which of the following statements are true for proper maintenance of hearing protective equipment?

    a) Reusable plugs should be thoroughly cleaned and inspected daily.
    b) Most disposable plugs can be used at least twice.
    c) Seals on ear muffs should be inspected & replaced as required.
    d) Ultraviolet light (in sunlight) is not harmful to plastic or foam components of most ear muffs.

Questions for *What is too loud on the farm?*

(Teacher's copy)

1. **Studies have shown that farmers have:**

   a) Better than average hearing
   b) Average hearing
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2. **What is considered a safe noise level?**

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   b) Most disposable plugs can be used at least twice.
   c) Seals on ear muffs should be inspected & replaced as required.
   d) Ultraviolet light (in sunlight) is not harmful to plastic or foam components of most ear muffs.

Activity 6: Hazardous Substances & Materials

Specific learning objectives

- To understand that hazardous materials and substances can be toxic solids, liquids or gases, which are poisonous to the body. They can cause injury or disease when we are exposed to them.
- To introduce students to the Workplace Hazardous Materials Information System (WHMIS) classification system for hazardous materials and substances
- To understand that not all products are controlled by WHMIS legislation

Materials

- Background notes
- *Handout 12: Chemical & Biological Hazards Chart*
- *Handout 13: Methods of Control*
- *Handout 14: Supplier's Label Quiz*
- *Handout 15: Safety Data Sheet Quiz*

Time: 90 minutes

Activity

If students have previously completed the *Module 5: Introduction to WHMIS 2015*, a review of this topic may be sufficient.

1. Discuss the information in the background notes with students. Distribute *Handout 12: Chemical & Biological Hazards Chart* and have students do the exercise. Discuss the results and provide the correct responses if necessary.

   Ask students for examples of toxic substances found in their homes and workplaces. Cleaning agents used in the kitchen or bathroom and lubricants and fuels used in the garage are examples of toxic substances in the home.

2. Have students complete *Handout 13: Methods of Control* and discuss the answers.

3. Distribute *Handout 14: Supplier's Label Quiz*. Have students complete the quiz. Discuss the correct responses. Ask the students: "What will you personally do to protect yourself from hazardous chemicals?"

4. Distribute the *Handout 15: Safety Data Sheet Quiz.* Have students complete the quiz. Discuss the correct responses.

Evaluation

1. Observe students' participation in and responses to activities.

2. Assess students’ responses to discussion questions and their understanding of the objectives of the noise hazard information.

3. Assess quizzes.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 6: Hazardous Substances & Materials*:

- Personal protective equipment
- Chemical and biological substances
- WHMIS
- Fire and explosion hazards

Background notes

Hazardous substances are dangerous. How dangerous they can be depends on:

- The type of substance
- What it is made of
- How it is used
- The frequency of use
- The way it enters the body
- The amount of substance that enters the body

Your workplace may use a lot of different hazardous substances. Some may be things you see every day such as chemical dusts, metal coatings, fumes, vapors and gases, radiation, and solvents.

Harm to health may occur suddenly (e.g., dizziness, nausea, and itchy eyes or skin) or it may occur gradually over years (e.g., dermatitis or cancer). Some people can be more susceptible than others.

We use hazardous substances almost every day of our lives. It may be antiseptic for a cut, paint for the walls, or a cleaning product or solvent. They may seem harmless, but even these ordinary things can make you very sick if used incorrectly.

A hazardous substance is any substance, whether solid, liquid or gas, that can harm you.

Chemical hazards

Chemical hazards are toxic chemical substances found in the workplace. They are found in different forms:

Solid	A substance that does not flow (e.g., wood)
Dust	Dry, fine powder made when a solid is broken up (e.g., fabric fibers, coal dust)
Fumes	Fine pieces made when a solid is heated (e.g., welding fumes)
Liquid	For example, water, oil
Vapours	Gas released when a liquid evaporates (e.g., solvent vapors, paint thinner)
Mists	Fine liquid particles from a spray (e.g., spray painting)
Gas	For example, natural gas for heating

Chemical hazards are increasingly common in all workplaces, from offices to factories. They take many forms, from gases to solids. Their effects can be short-term, such as skin irritation, or they can be chronic and fatal, such as cancer. Other chronic effects may include heart attacks, kidney failures and sterility.

Workers are commonly exposed to chemical hazards in workplaces such as:

- Offices, due to problems from gases released by carpets, furniture, building materials; poor ventilation or lack of fresh air circulation; chemicals, inks, toners and solvents
- Metal manufacturing, due to cutting fluids, dust and so forth
- Plastics manufacturing
- Cleaners working with solvents and chemical cleaners
- Petrochemical industry
- Forest products industry due to glues, paints and preservatives
- Painting
- Landscaping due to pesticides, fertilizers and so forth

Chemical toxic substances tend to cause disease in the body through three main avenues:

1. Where they enter the body – the respiratory system (inhaled), the skin (absorbed) and the digestive system (ingested)
2. In the blood that carries them throughout the body
3. In the organs that remove them from the body

Most commonly, chemicals enter the body when **inhaled** into the lungs. Contaminants in the workplace have ready access, through the tiny cells in our lungs, to the bloodstream and other major organs of the body.

Absorption through the skin is the second most common route of entry for toxic substances. Liquids in particular can be absorbed through the skin into small blood vessels. Some solvents also dissolve the protective oil barrier of the skin and pass freely into the bloodstream.

Ingestion is the third major way toxins enter the body. Some toxic substances, such as asbestos fibers, may be trapped in the lungs and also reach the stomach when you swallow. Toxic substances can also be ingested if food is eaten in unsanitary work areas or if the food itself contains residues of toxic substances such as pesticides.

Biological hazards

Biological hazards are living organisms such as bacteria, viruses, moulds, fungi and parasites. They can be present in animal flesh, stale water, oils, soil, body fluids or in other people.

Workers can be exposed to biological hazards in numerous ways. Workers can absorb biological hazards, ingest them or inhale them. Biological hazards can also enter the body through eye contact, open wounds, sores or a needle stab.

Workers are commonly at risk of exposure to biological hazards in workplaces such as:

- Child care, health care and health service providers exposed to sick people, contaminated blood bags, needles or laboratory specimens
- Food service workers preparing uncooked chicken, meat or fish
- Sanitation system workers in water treatment plants and garbage handlers
- Custodial workers cleaning public washrooms
- Factory workers through contact with contaminated oils and coolants
- People who work in an indoor environment with contaminated air conditioning units
- Industrial workers working with natural fibres such as cotton
- Construction workers exposed to mould-covered surfaces due to water damage

The health effects of biological hazards include:

- Irritated eyes from poor indoor air
- Occupational asthma from cotton dust
- Skin rashes and dermatitis due to poor water treatment
- Gastrointestinal infections from the food industry
- Aids and hepatitis from exposure in hospitals
- Death caused by contaminated air conditioning units, as was the case with Legionnaire's disease

Controlling hazardous materials

What we can't see, taste or feel immediately may still cause us bodily harm. Some of the most damaging hazards are the chemicals workers handle on a daily basis in the workplace.

We have a national system that helps protect workers from chemical and biological hazards. This system is known as Workplace Hazardous Materials Information System or WHMIS.

WHMIS

WHMIS applies to all Canadian workplaces. It requires that everyone who works with or near a hazardous substance or product receive information about its potential hazards and recommended safe work practices. WHMIS is implemented through a combination of federal and provincial regulations.

WHMIS requires that information be provided in three ways:

1. **Hazardous product labeling** – This labeling alerts workers to identify the dangers of products and to take basic safety precautions. All hazardous materials must carry labels that clearly identify their risks and recommend precautions for safe handling.

   This labeling must appear on product containers provided by suppliers and on controlled products imported into the workplace from outside of Canada.

2. **Safety data sheets** – Safety data sheets (SDSs) and hazard information must be readily available in the workplace. An SDS summarizes the health and safety information about the product.

3. **Worker education and training programs** – Workers must receive education and training to recognize and work safely with chemicals. The employer is responsible to educate and train workers on interpreting and using the information provided on labels and SDSs. Workers must receive both education and training before they use any hazardous product in the workplace.

The “hazard symbol” is an important part of the WHMIS label. It warns that a particular hazard exists.

You will learn about hazardous products in the module on the WHMIS.

Safety Data Sheets

Safety Data Sheets (SDSs) provide detailed information on hazardous substances. They give more details than labels. The manufacturers and suppliers of hazardous substances provide your employer with SDSs for their products.

It is important to use hazardous substances in the workplace according to:

- The manufacturer or supplier's written instructions
- The SDS
- Agreed safe work procedures

If you need more information on the product you are using, ask your supervisor, Occupational Health Committee or health and safety representative for an SDS.

Your training should include how to obtain first aid treatment for hazardous substance exposure.

Summary of WHMIS rights and responsibilities

Chemical supply companies are responsible for:

- Labeling hazardous materials supplied to the workplace
- Providing the SDS

Employers are responsible for:

- Ensuring that SDSs for all controlled products supplied to the workplace are received and kept up to date
- Making information provided by the supplier available to workers – This information must be accessible to workers, close to their work areas and available during each work shift.
- Educating workers about WHMIS – This education must be workplace specific, dealing with the actual hazards of the workplace.
- Training workers to handle, store and dispose of hazardous materials safely. Also, teaching workers the steps to follow if the material incidentally escapes into the workplace or when an emergency occurs.

It is the responsibility of the employer to provide workers with safe work procedures for handling hazardous substances and to provide information, training and supervision. Workers are responsible for following the safe work practices and procedures provided by the employer.

Remember:

- Follow safe work procedures.
- Always wear the appropriate safety equipment provided by the employer and wear it correctly.
- Do not eat, drink or smoke while working with a hazardous material or substance.
- Do not keep food or drink near a hazardous substance.
- Wash your hands, face and other exposed areas with soap and water before going to the toilet or eating and drinking.
- Read the SDSs.

Handout 12: Chemical & Biological Hazards Chart

How are we exposed to chemical and biological hazards? How are we affected by the hazards?

List five “chemical hazards,” their effects on our health and how we are exposed to them.

	Name of chemical	**Health effects**	**Ways of being exposed**
1	Asbestos	Cough, lung cancer	Inhale
2			
3			
4			
5			

List five “biological hazards,” their effects on our health and how we are exposed to them.

	Name of biological hazard	**Health effects**	**Ways of being exposed**
1	Uncooked chicken or meat	Food poisoning	Ingest (eat)
2			
3			
4			
5			

Handout 13: Methods of Control

1. What are some hazards at your job (home or school)?

2. List five methods of control used at the source (refer to first question):

   A. _____

   B. _____

   C. _____

   D. _____

   E. _____

3. List two methods of control used along the path:

   A. _____

   B. _____

4. List six kinds of personal protective equipment used by the worker:

   A. _____

   B. _____

   C. _____

   D. _____

   E. _____

   F. _____

Handout 13: Methods of Control

(Teacher's copy)

1. What are some hazards at your job (home or school)?

Go over student responses.

2. List five methods of control used at the source (refer to first question):

A. Go over students' responses here for the hazards they've identified above.

B. _____

C. _____

D. _____

E. _____

3. List two methods of control used along the path:

Engineering: e.g., machine guards, noise buffers, etc.

Administrative: e.g., arranging work to be done and workers' schedules to minimize exposure to shiftwork, sun (UV radiation), etc.

4. List six kinds of personal protective equipment used by the worker:

A. See the list of personal protective equipment provided earlier in this module.

B. _____

C. _____

D. _____

E. _____

F. _____

Handout 14: Supplier's Label Quiz

Example of a supplier's label

Product K1 / Produit K1

Danger

Fatal if swallowed.
Causes skin irritation.

Precautions:

Wear protective gloves.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Store locked up.
Dispose of contents/containers in accordance with local regulations.

IF ON SKIN: Wash with plenty of water.
If skin irritation occurs: Get medical advice or attention.
Take off contaminated clothing and wash it before reuse.
IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
Rinse mouth.

Danger

Mortel en cas d'ingestion.
Provoque une irritation cutanée.

Conseils :

Porter des gants de protection.
Se laver les mains soigneusement après manipulation.
Ne pas manger, boire ou fumer en manipulant ce produit.

Garder sous clef.
Éliminer le contenu/récipient conformément aux règlements locaux en vigueur.

EN CAS DE CONTACT AVEC LA PEAU : Laver abondamment à l'eau.
En cas d'irritation cutanée : Demander un avis médical/consulter un médecin.
Enlever les vêtements contaminés et les laver avant réutilisation.
EN CAS D'INGESTION : Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
Rincer la bouche.

Compagnie XYZ, 123 rue Machin St, Mytown, ON, N0N 0N0 (123) 456-7890

Source: Canadian Centre for Occupational Health and Safety

Supplier's Label Quiz

1. Supplier labels are required on:

    a) Containers furnished by suppliers of hazardous products
    b) Hazardous products imported into the workplace from outside Canada
    c) All of the above

2. What does each hazard symbol on this label stand for?

3. Where would you find information for this product?

4. When you use this product, what precautionary measures should you take?

Handout 14: Supplier's Label Quiz

(Teacher's copy)

1. **Supplier labels are required on:**

   a) Containers furnished by suppliers of hazardous products
   b) Hazardous products imported into the workplace from outside Canada
   c) All of the above

2. **What does each hazard symbol on this label stand for?**

   Fire, poison

   For additional information on the name and meaning of different hazard symbols, see *Module 5: An Introduction to WHMIS* 2015.

3. **Where would you find information for this product?**

   SDSs

4. **When you use this product, what precautionary measures should you take?**

   Specific personal protective equipment

   Eyes: face shield and goggles
   Gloves: rubber
   Other clothing and equipment: rubber apron, rubber boots

Handout 15: Safety Data Sheet Quiz

Questions

1. Before working with a substance, especially for the first time, you should:

   ____ a) Check the SDS
   ____ b) Check the label
   ____ c) Check both the label and the SDS

2. Would you usually find the following information on a label or SDS? Write L for "label" or S for "SDS."

   ____ a) Symptoms of acute and chronic health effects
   ____ b) Information on the specific personal protection you should wear
   ____ c) Immediate first aid information

   You will need to consult the SDS on the following pages for question 3.

3. You are working with a controlled product. You need to transfer some of it to a portable container for a job you are doing. After consulting the SDS for this material, you find out that the personal protective equipment you need to work safely with this material is under which section of the SDS?

   ____ a) First aid measures
   ____ b) Toxicological properties
   ____ c) Physical data
   ____ d) Preventive measures

4. A worker has noticed some skin irritation for the last couple of weeks, just about the time the worker started using this cleaner. You check the SDS to see whether the symptoms could be related to the use of the product. You discover that (check one):

   ____ a) the cleaner could be causing the problem
   ____ b) the cleaner could not be causing the problem

Handout 15: Safety Data Sheets Quiz

(Teacher's copy)

The following eight pages illustrate the product information required on a safety data sheet (SDS).

Questions

1. **Before working with a substance, especially for the first time, you should:**

   ____ a) Check the SDS
   ____ b) Check the label
   ____ c) Check both the label and the SDS

2. **Would you usually find the following information on a label or SDS? Write L for "label" or S for "SDS."**

   _S_ a) Symptoms of acute and chronic health effects
   _L_ b) Information on the specific personal protection you should wear **(Some information will appear on S.)**
   _L_ c) Immediate first aid information **(Some information will appear on S.)**

   You will need to consult the SDS on the following pages for question 3.

3. **You are working with a controlled product. You need to transfer some of it to a portable container for a job you are doing. After consulting the SDS for this material, you find out that the personal protective equipment you need to work safely with this material is under which section of the SDS?**

   ____ a) First aid measures
   ____ b) Toxicological properties
   ____ c) Physical data
   ____ d) Preventive measures

4. **A worker has noticed some skin irritation for the last couple of weeks, just about the time the worker started using this cleaner. You check the SDS to see whether the symptoms could be related to use of the product. You discover that (check one):**

   ____ a) the cleaner could be causing the problem
   ____ b) the cleaner could not be causing the problem

Sample Safety Data Sheet

(for illustrative purposes only)

Cleans SUPER Great

SECTION 1. IDENTIFICATION

Product Identifier	Cleans SUPER Great
Other Means of Identification	ID-999
Recommended Use	Concentrated cleaner.
Restrictions on Use	None.
Manufacturer / Supplier	ABZ Company, 123-5th Street, Anywhere, Ontario, N0N 0N0
Emergency Phone No.	E. Responder, 555-222-3333, 24/7
SDS No.	0164
Date of Preparation	February 02, 2014

SECTION 2. HAZARDS IDENTIFICATION

Classification

Flammable liquid - Category 2; Eye irritation - Category 2A; Skin sensitization - Category 1; Specific target organ toxicity single exposure - Category 3; Aspiration hazard - Category 1

Label Elements

Pictogram: Flame; Exclamation mark; Health hazard

Signal Word: Danger

Hazard Statement(s):

Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.

Precautionary Statement(s):

Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating, lighting, and other equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid breathing mist, vapours, spray.
Wash hands and skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, protective clothing, eye protection and face protection.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.

IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before re-use. Wash skin with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting.

In case of fire: Use carbon dioxide, dry chemical powder, appropriate foam to extinguish.

Storage:
Store locked up.
Keep container tightly closed.
Store in a well-ventilated place. Keep cool.

Disposal:
Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration %
Acetone	67-64-1	35
Diethylene glycol monoethyl ether	111-90-0	25
Terpene	CBI*	5
Naphtha (petroleum), hydrotreated heavy	64742-48-9	5

Notes
*CBI, under review. CBI = Confidential Business Information. HMIRA Registration No.: 1234. Filing Date: January 04, 2012. (Terpene)
Concentrations are expressed in % volume/volume.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor if you feel unwell or are concerned.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation or a rash occurs, get medical advice/attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

Ingestion

Immediately call a Poison Centre or doctor. Do not induce vomiting.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled: at high concentrations symptoms may include headache, nausea, dizziness, drowsiness and confusion.
If on skin: may cause an allergic skin reaction in some people. Symptoms include redness, rash, itching and swelling.

If in eyes: symptoms include sore, red eyes, and tearing.
If swallowed: may be drawn into the lungs if swallowed or vomited, causing severe lung damage. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Immediate Medical Attention and Special Treatment

Special Instructions

Not applicable.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam. Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable Extinguishing Media

Water is not effective for extinguishing a fire. It may not cool product below its flash point.

Specific Hazards Arising from the Chemical

Highly flammable liquid and vapour. Can ignite at room temperature. Releases vapour that can form explosive mixture with air. Can be ignited by static discharge.
May travel a considerable distance to a source of ignition and flash back to a leak or open container. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, resulting in a fire and/or health hazard.
Closed containers may rupture violently when heated releasing contents.
In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide. As well, other toxic and irritating compounds, such as formaldehyde, methanol, acetic acid, hydrogen peroxide, methane and ethylene oxide may be formed, depending on fire conditions.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases.
Stop leak before attempting to put out the fire. Product could form an explosive mixture and reignite. Keep containers cool to avoid bursting.
Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere.
Dike and recover contaminated water for appropriate disposal.
Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn. If there is potential for skin contact with concentrated cleaner: chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary. See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Concentrated product: evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Distant ignition and flashback are possible.
Increase ventilation to area or move leaking container to a well-ventilated and secure area. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet.
Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.
Before entry, especially into confined areas, check atmosphere with an appropriate monitor. Monitor area for flammable or explosive atmosphere.

Product (diluted as directed): use the personal protective equipment recommended in Section 8 of this safety data sheet. No other special precautions are necessary.

Environmental Precautions

Concentrated product: do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Concentrated product: small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Do NOT use combustible materials such as sawdust. Place used absorbent into suitable, covered, labelled containers for disposal.

Concentrated product: large spills or leaks: cover the spill surface with the appropriate type of foam to reduce the release of vapour. Dike spilled product to prevent runoff. Remove or recover liquid using pumps or vacuum equipment. Dike and recover contaminated water for appropriate disposal. Store recovered product in suitable containers that are: tightly-covered.

Product (diluted as directed): no special clean-up methods are necessary.

Other Information

Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

When handling diluted product: no special handling precautions are necessary.

When handling concentrated product: only use where there is adequate ventilation. Avoid generating vapours or mists. Keep containers tightly closed when not in use or empty. Electrically bond and ground equipment. Ground clips must contact bare metal. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Use non-sparking tools. Wear personal protective equipment to avoid direct contact with this chemical.

Do NOT smoke in work areas. Wash hands thoroughly after handling this material. Immediately remove contaminated clothing using the method that minimizes exposure. Keep contaminated clothing under water, in closed containers. Launder clothes before rewearing. Inform laundry personnel of product hazard(s). Do not take contaminated clothing home.

Conditions for Safe Storage

Concentrated product: store in an area that is: temperature-controlled, well-ventilated, out of direct sunlight and away from heat and ignition sources, an approved, fire-resistant area, separate from incompatible materials (see Section 10: Stability and Reactivity). Store in a closed container.
Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Keep amount in storage to a minimum. Avoid bulk storage indoors.
Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH® TLV®		OSHA PEL		AIHA® WEEL™	
Chemical Name	**TWA**	**STEL [C]**	**TWA**	**Ceiling**	**8-hr TWA**	**Short-term TWA [C]**
Acetone	500 ppm A4	750 ppm	750 ppm		Not established	
Diethylene glycol monoethyl ether	Not established		Not established		25 ppm	
Terpene	Not established		Not established		30 ppm	

Naphtha (petroleum), hydrotreated heavy	Not established		Not established		Not established	

Consult local authorities for provincial or state exposure limits.
ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. A4 = Not classifiable as a human carcinogen. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. AIHA® = AIHA® Guideline Foundation. WEEL™ = Workplace Environmental Exposure Limit.

Appropriate Engineering Controls
General ventilation is usually adequate. Provide eyewash and safety shower if contact or splash hazard exists. When handling large quantities of concentrated product: use a local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

Individual Protection Measures

Eye/Face Protection
Do not get in eyes. Wear chemical safety goggles.

Skin Protection
Prevent all skin contact. Wear chemical protective clothing e.g. gloves, aprons, boots.
Suitable materials are: Barrier® (PE/PA/PE), Silver Shield/4H® (PE/EVAL/PE), Tychem® Responder, Tychem® TK.
The following materials should NOT be used: neoprene rubber, nitrile rubber, polyvinyl alcohol.

Respiratory Protection
Not normally required if product is used as directed.
Concentrated product: wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.
For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an organic vapour cartridge, or, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Colourless liquid.
Odour	Citrus
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	-94.6 °C (estimated) (freezing)
Initial Boiling Point/Range	56 °C
Flash Point	< -18 °C (closed cup)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable (liquid).
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	180 mm Hg at 20 °C (Acetone)
Vapour Density (air = 1)	> 3 (estimated)
Relative Density (water = 1)	0.86 at 20 °C
Solubility	Soluble in water
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	14.2 mm2/s at 40 °C (kinematic)

Other Information
Physical State Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity
Not reactive. Not sensitive to mechanical impact.

Chemical Stability
Normally stable.

Possibility of Hazardous Reactions
None expected under normal conditions of storage and use.

Conditions to Avoid
Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials
Oxidizing agents (e.g. peroxides), strong bases (e.g. sodium hydroxide), reducing agents (e.g. hydroquinone). Not corrosive to metals.

Hazardous Decomposition Products
During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide and other toxic and irritating compounds, such as formaldehyde, methanol, acetic acid, hydrogen peroxide, methane and ethylene oxide may be formed, depending on fire conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure
Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Acetone	30000 ppm (male rat) (4-hour exposure)	5800 mg/kg (female rat)	> 16000 mg/kg (rabbit)
Diethylene glycol monoethyl ether	Not available	1920 mg/kg (rat)	6000 mg/kg (rat)
Terpene	Not available	5300 mg/kg (rat)	> 5000 mg/kg (rabbit)
Naphtha (petroleum), hydrotreated heavy	Not available	Not available	Not available

Skin Corrosion/Irritation
May cause mild irritation based on information for closely related chemicals.

Serious Eye Damage/Irritation
Animal tests show serious eye irritation. (Acetone)

STOT (Specific Target Organ Toxicity) - Single Exposure
Inhalation
May cause depression of the central nervous system.

Aspiration Hazard

May be drawn into the lungs (aspirated) if swallowed or vomited. Symptoms may include coughing, choking, shortness of breath, difficult or rapid breathing, and wheezing.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Following skin contact: may cause dermatitis.
May cause harmful effects on the kidneys, harmful effects on the liver.

Respiratory and/or Skin Sensitization

Not a respiratory sensitizer.
Skin sensitizer. May cause an allergic reaction (skin sensitization) based on information for closely related chemicals.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Acetone	Not evaluated	A4	Not Listed	Not Listed
Diethylene glycol monoethyl ether	Not evaluated	Not designated	Not Listed	Not Listed
Terpene	Not evaluated	Not designated	Not Listed	Not Listed
Naphtha (petroleum), hydrotreated heavy	Group 3	Not designated	Not Listed	Not Listed

Key to Abbreviations
IARC = International Agency for Research on Cancer. Group 3 = Not classifiable as to its carcinogenicity to humans.
ACGIH® = American Conference of Governmental Industrial Hygienists. A4 = Not classifiable as a human carcinogen.
NTP = National Toxicology Program.

Reproductive Toxicity

Development of Offspring

Animal studies show effects on the offspring. However, these effects are only seen with significant toxicity in the mothers. (Acetone)

Sexual Function and Fertility

Does not cause effects on sexual function or fertility.

Germ Cell Mutagenicity

Not mutagenic.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS.
This section is not required by OSHA.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Recommended disposal methods are for the product, as sold. (Used material may contain other hazardous contaminants). The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

Burn in an approved incinerator according to federal, provincial/state, and local regulations.
Empty containers retain product residue. Follow label warnings even if container appears to be empty. The container for this product can present explosion or fire hazards, even when emptied. Do not cut, puncture, or weld on or near this container.

SECTION 14. TRANSPORT INFORMATION

Regulations	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN1993	Flammable Liquid N.O.S. (Acetone)	3	II

Special Precautions for User
Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations
Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)
All ingredients are listed on the DSL/NDSL.

CEPA - National Pollutant Release Inventory (NPRI)
Part 5. (Naphtha (petroleum), hydrotreated heavy)

USA

Toxic Substances Control Act (TSCA) Section 8(b)
All ingredients are listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

SDS Prepared By Ima Expert

Phone No. 555-444-3333

Date of Preparation February 02, 2014

Revision Indicators The following SDS content was changed on May 07, 2013:
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS.

References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS).

Activity 7: Slips & Falls

Specific learning objectives

- To recognize and correct a potential incident when you see it
- To use safe work procedures and good housekeeping measures to reduce and eliminate injury
- To be aware of your abilities and limitations and realize that the only way to do the job is the safe way, even if it takes longer
- To use the proper tools and equipment to do the job

Materials

- Background notes
- *Handout 16: Prevention of Slips, Trips & Falls*

Time: 40 minutes

Activity

1. Review and discuss background information with students. Distribute *Handout 16: Prevention of Slips, Trips & Falls*.

2. Have students design a safety checklist and housekeeping rules for their classroom.

Evaluation

1. Observe students' participation in the discussion and their responses to activities.

2. Assess students' safety checklists and their understanding of the objectives of the slips and falls hazard information.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 7: Slips & Falls*:

- Personal protective equipment
- Falling hazards

Background notes

Falls happen from different heights as well as on the same level. A fall can cause injury to the arms, legs, back, neck or head. Neck and head injuries can cause damage to the spinal cord and nervous system. Many workers have suffered permanent disabling injuries or death as a result of a fall.

With safe work practices, good housekeeping, precautions and caution, most slips and falls can be prevented.

Three categories of falls

1. Slips, trips and falls (falls on the same level)
2. Falls from height (a fall from one level to another)
3. Falls into (the abyss!)

Slips

When you slip or slide suddenly, you can be injured. Muscles, ligaments, tendons and bones can be damaged when you slip. Different conditions can cause you to slip.

	Condition	Prevention
1	Ice, wet spots, grease and polished floors create a very slippery surface.	Clean up wet spots. If they cover a large area, post warning signs. Clean up grease with rags and detergent. In extreme cases, put down sawdust to absorb the grease.
2	Carpets not rubberized on the bottom or not firmly attached to the floor may move when stepped on. The same thing can happen when parts of the floor become loose (e.g., a tile that comes up or a piece of ramp that shifts). If a person steps on loose flooring, it is possible to slip.	Repair and prevention can prevent this condition.
3	Surfaces are slippery and cannot be corrected.	Walk carefully and slowly. Post signs.

While on the work site, it’s 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.

Review *Handout 1: Basic Safety Rules & Checklists*, page 16.

Trips

Unnecessary clutter or obstacles can catch your foot and cause you to trip.

- In the office, arrange furniture to allow easy movement through the workspace.
- Do not store items in aisles, on stairs, in hallways or in areas that many people pass through.
- Open desk drawers and filing cabinets cause trips and falls. Keep them closed even when you think it 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 impossible, ensure the cords are secured to the floor, so people cannot slip or catch their feet on the cords.
- Pant legs and poor shoes can also trip someone. Workers may catch their feet in the leg of long or baggy pants. Shoes that fit loosely, high heels, open toes or slippery soles are more likely to cause a tripping incident than well-fitting shoes with non-skid soles and low heels.

Good housekeeping, appropriate clothing, proper lighting and care will help prevent injuries from "unplanned trips" at work.

Falls

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

Makeshift stacks of furniture or boxes used as a step ladder are a common cause of falls. Know how to use a ladder properly. It’s the safe way.

Slips, trips & falls in the workplace

Slippery and uneven floors in the workplace can result in more serious incidents than just slipping or tripping and falling over. In food preparation areas, burns can occur during slips, trips and falls if pots of hot liquid are pulled or knocked onto workers or the floor. When working on a construction site, it is important to ensure that scaffolding is constructed safely. When working high above the ground, personal protective equipment (PPE) should be supplied.

Handout 16: Prevention of Slips, Trips & Falls

You can prevent slips, trips and falls by:

- Recognizing and correcting a potential incident situation when you see it
- Being aware of what you can and can't do (i.e., what's beyond your ability)
- Doing things the safe way even if it takes longer
- Fixing, removing or avoiding potential accidents
- Using the proper equipment to do the job
- Wearing proper footwear

Activity 8: Managing Shift Work

Specific learning objectives

- To develop an awareness of the health and safety hazards related to shift work
- To recognize the symptoms of poor health that may be related to shift work
- To recognize that there is an increased risk of violence for certain types of shift work (e.g., working alone at night)
- To recognize that there is an increased risk of incidents associated with working extended hours and late shifts

Materials

- Background notes
- *Handout 17: Discussion Questions for Managing Shift Work*
- Shift work section in the *Guide for New Workers*

Time: 60 minutes

Activity

1. Review and discuss the background information on managing shift work.

2. Distribute *Handout 17: Discussion Questions for Managing Shift Work*. Discuss students' responses to the questions.

Evaluation

1. Observe students' participation in activities.

2. Assess students' responses to discussion questions and their understanding of the objectives of the managing shiftwork information.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 8: Managing Shift Work*:

- Shift work and constant effort and exertion
- Harassment
- Violence
- Working alone or at isolated place of employment (Regulations3-24)

Background notes

Shift work usually means regularly scheduled work that is done outside normal daytime hours of 7 a.m. to 6 p.m. Shiftwork disrupts body rhythms and can affect health and social well-being.

Safety problems associated with shift work include impaired performance, risk of incidents, and violence. Shift work can lead to sleepiness and can decrease performance, alertness, perception and decision-making ability. These conditions can contribute to incidents and injuries.

Most **night workers** complain of sleepiness and sometimes fall asleep on the job. Performing tasks that require alertness may be more difficult at night when workers' bodies are prepared for sleep. An accumulated sleep deficit from prolonged shift work can decrease a worker's level of performance and alertness, regardless of the time of day.

Working **extended shifts** can also cause poor performance and decreased alertness. Performance deteriorates on extended work shifts where the work is physically or mentally demanding. Perception and decision-making ability may also be affected on extended shifts.

Shift work hazards can be controlled by:

- Involving shift workers, when possible, in developing and choosing their shift schedules; the Occupational Health Committee can help with this task.
- Using organizational controls (e.g., limit shift work to essential jobs and provide proper supervision, adequate rest and meal breaks), workplace design and workplace supports to minimize the hazards of shift work
- Informing workers of the hazards and how to control them

Violence

Any worker required to work with other people may be exposed to workplace violence. Shift work sometimes means a worker works alone at night. These workers may be more vulnerable to violence from customers and society at large.

Employers in certain workplaces are required by *The Saskatchewan Employment Ac*t (SEA 3-21 Duty re policy statement on violence and prevention plan)to develop a written violence policy statement and prevention plan to minimize or eliminatethe risk of violence. The policy must:

- Identify workers at risk and inform them
- Identify actions to minimize or eliminate the risk
- Include training the worker

Late night retail establishments, like 24-hour convenience stores open between the hours of 11 p.m. and 6 a.m., are one of the workplaces required to develop a written violence policy statement and implement a prevention plan. (Regulation 3-17 Safety measures – retail premises).

They must establish the following security measures:

- Written safe cash handling procedures
- Video cameras that survey key areas of the workplace
- Signage stating there is a small amount of cash and video surveillance on the premises

For individuals who work alone, extra security measures are needed. The employer will have a written check-in procedure and supply the worker with a personal emergency transmitter to signal emergency response (i.e., 911 or a security company) when activated.

Under *The Conditions of Employment Regulations*, employers are required to arrange free transportation home for hotel, restaurant, educational institution, hospital and nursing home workers who finish work between the hours of 12:30 a.m. and 7 a.m.

Handout 17: Discussion Questions for *Managing Shift Work*

1. What is shift work?

2. What are some safety problems that can develop in shift work?

3. How can shift work hazards be controlled?

4. What types of workplaces are more prone to potentially violent situations?

Workplace harassment, shift work and violence

Workplace harassment – Harassment can injure a victim mentally and financially. It can also make your business less productive. Workplace harassment is defined in clause 3(1)(l) of *The Saskatchewan Employment Act.* Clause 3-8(d) of the act requires employers to ensure that workers are not harassed. Regulation 3-25 Harassment requires employers to implement a policy to protect workers. The regulation lists what must be in the policy statement. (Occupational Health and Safety has an example of a policy statement.)

Employers should develop a policy **with workers** and post a copy where they will see it.

To assess the risk of harassment, employers and workers can:

- Check to see that your harassment policy is in place and working properly
- Check for signs that the policy is not taken seriously
- Look for complaints or concerns from workers

Shift work – Shift workers have irregular patterns of eating, sleeping, working and socializing that can cause health and social problems. Shift work can also reduce performance and attentiveness. In turn, this may increase the risk of incidents and illnesses. Experience suggests that workers in convenience stores and other workplaces that are open 24 hours a day are more likely to encounter violent situations when working alone.

Employers and workers can co-operatively identify and control these hazards. Co-operation is essential. Regulation 6-19 Shift work and constant effort and exertion deals with stress caused by shift work. It requiresemployers to work with workers to:

- Assess the risks shiftwork poses to workers' health and safety
- Inform workers about the nature and extent of the risks and how to eliminate or reduce them

Violence – Workers need to know how to handle potentially violent situations. For example, staff may have to deal with shoplifters, robbers or people under the influence of drugs or alcohol. SEA 3-21 Duty re policy statement on violence and prevention plan sets out your responsibilities for developingand implementing a written violence policy statement and prevention plan policy with your workers.

Regulation 3-26 Violence:

- Defines what is meant by "violence" within the legislation
- Lists places of employment that must develop a violence policy statement and prevention plan
- Describes what must be included in a policy statement

Regulation 3-27 Safety measures – retail premises requires late night retail establishments open between the hours of 11
p.m. and 6 a.m. to develop a written violence policy statement and implement a prevention plan. They must also establish:

- Written safe cash handling procedures
- Video cameras that survey key areas of the workplace
- Signage stating there is a small amount of cash and video surveillance on the premises
- For individuals who work alone, a written check-in procedure and a personal emergency transmitter to signal emergency response (i.e., 911 or a security company) when activated

Occupational Health and Safety has a sample policy on workplace violence for small businesses.

Handout 17: Discussion Questions for *Managing Shift Work*

(Teacher's copy)

1. What is shift work?

Shift work usually means regularly scheduled work that is done outside the normal daytime hours of 7 a.m. to 6 p.m.

2. What are some safety problems that can develop in shift work?

Safety problems associated with shift work include impaired performance, risk of incidents, and violence. Shift work can lead to sleepiness and cause decreased performance, alertness, perception and decision-making ability. These conditions can contribute to incidents and injuries.

3. How can shift work hazards be controlled?

Shift work hazards can be controlled by:

- Involving shift workers, wherever possible, in developing and choosing their shift schedules.
- Using organizational controls (for example, limit shift work to essential jobs and provide proper supervision, adequate rest and meal breaks), workplace design and workplace supports to minimize the hazards of shift work.
- Informing workers of the hazards and how to control them.

4. What types of workplaces are more prone to potentially violent situations?

Workers who work alone at night may be more vulnerable to violence from customers and society at large.

Activity 9: Stress (Harassment & Violence)

Specific learning objectives

- To understand that harassment is a stress hazard that can affect work performance
- To define harassment and recognize that every worker is entitled to a working environment free of harassment

Materials

- Background notes
- *Handout 18: Discussion Questions for Harassment*
- Pamphlets and brochures from Occupational Health and Safety

Time: 60 minutes

Activity

1. Review and discuss the background information on stress, harassment and violence.

2. Distribute *Handout 18: Discussion Questions for Harassment*. Have students complete the discussion questions and review their responses.

Evaluation

1. Observe students' participation in activities.

2. Assess students' responses to discussion questions and their understanding of the objectives of the stress, harassment and violence hazard information.

The act and regulations

The following regulations apply to the information and activities covered in *Activity 9: Stress*:

- Harassment
- Violence
- Working alone or at isolated place of employment (Regulations3-24)
- Safety measures – retail

Background notes

Harassment can create a hostile or poisoned work environment and affect the health and safety of everyone in the workplace.

Employers and workers are protected against harassment in the workplace. Every workplace is required to have a written harassment policy that sets out how harassment complaints are to be handled. Everyone shares the responsibility to ensure a harassment-free workplace.

"Harassment" now means any inappropriate conduct, comment, display, action or gesture by a person that constitutes a threat to the health or safety of a worker. Harassment falls into two categories.

1. Harassment based on race, creed, religion, colour, sex, sexual orientation, marital status, family status, disability, physical size or weight, age, nationality, ancestry or place of origin.
2. Harassment that adversely affects a worker's psychological or physical well-being, and that the person who perpetrates the harassment knows or ought reasonably to know would cause a worker to be humiliated or intimidated. This does not include any reasonable action taken by an employer or supervisor relating to the management and direction of the employer's workers or the place of employment. Under this category, the harassment must: involve repeated conduct, OR involve a single, serious occurrence that causes a lasting harmful effect.

Harassment is prohibited under *The Saskatchewan Human Rights Code* and *The Saskatchewan Employment Act*.

Anyone can be a victim of harassment. If you are exposed to behaviour in the workplace that makes you feel uncomfortable, it is important that you tell the harasser (e.g., your co-worker or supervisor) what makes you uncomfortable. The sooner you do it, the better for you. If you don't speak up, your silence may give the impression that the behaviour is acceptable to you. The behaviour may continue or become worse, so set your boundaries early. People respect those who have and exhibit self-respect.

Violence

Certain types of working conditions (e.g., working at night, in isolation) may be high risk or dangerous to workers. Workers working in those conditions may be more vulnerable to violence from customers and society at large.

Employers in certain workplaces are required by *The Occupational Health and Safety Regulations, 2020* to develop a policy to minimize or eliminate the risk of violence.

The policy must:

- Identify workers at risk and inform them
- Identify actions to minimize or eliminate the risk
- Include worker training

Handout 18: Discussion Questions for *Harassment*

1. If you feel you are being harassed in the workplace, what should you do?

2. If you feel that a co-worker is being harassed in the workplace, what should you do?

3. As a new worker, you are exposed to comments and gestures by co-workers of the opposite sex. You find their actions offensive. How would you deal with the situation? Create and act out a role play for this situation.

Handout 18: Discussion Questions for *Harassment*

(Teacher's copy)

1. **If you feel you are being harassed, what should you do?**

   Check the harassment policy for your workplace. Follow the guidelines laid out in it.

   In general, your first step should be to speak up:

   - Tell the person who is harassing you that you find the behaviour offensive.
   - Tell him or her to stop.

   If the offensive behaviour continues, your next step is to go to your supervisor (if the harasser is a co-worker) or to human resources, if that seems more appropriate.

2. **If you feel that a co-worker is being harassed, what should you do?**

   Again, check the harassment policy for your workplace. Follow the guidelines laid out in it.

   Follow the same steps as in 1 above.

3. **As a new worker in the workplace you are exposed to comments and gestures, by co-workers of the opposite sex. You find their actions offensive. How would you deal with the situation? Create and act out a role play for this situation.**

   Observe the students' role plays of this situation and give them feedback on their performance and behaviour.

Occupational Health & Safety Regulations

Check *The Saskatchewan Employment Act and The Occupational Health and Safety Regulations, 2020* for application and interpretation of the law.

Occupational health and safety regulations vary according to industry, work setting and task. Employers should provide all workers (including you) with workplace specific training.

For your reference, here's a list of occupational health and safety regulations of importance to workers in *all* industries.

Part		Section	
Part 3	General Duties	3-3	Employment of young persons
Part 4	Committees & Representatives		
Part 5	First Aid		
Part 6	General Health Requirements	6-2	Ventilation and air supply
		6-3	Mechanical ventilation
Part 7	Personal Protective Equipment	7-2	General responsibilities
		7-3	Respiratory protective devices
		7-5	Working in dangerous atmospheres
		7-6	Protective headwear
		7-8	Eye and face protectors
		7-9	Skin protection
		7-11	Footwear
		7-14	Exposure to noise
Part 9	Safeguards, Storage, Warning Signs and Signals	9-2	Protection against falling
Part 10	Machine Safety	1 10-6	Locking out
Part 21	Chemical and Biological Substances	21-13	Flammable, unstable, highly reactive and corrosive substances
Part 22	Controlled Products: Workplace Hazardous Materials Information System		
Part	Fire and Explosion Hazards	25-3	Fire extinguishers

25			

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