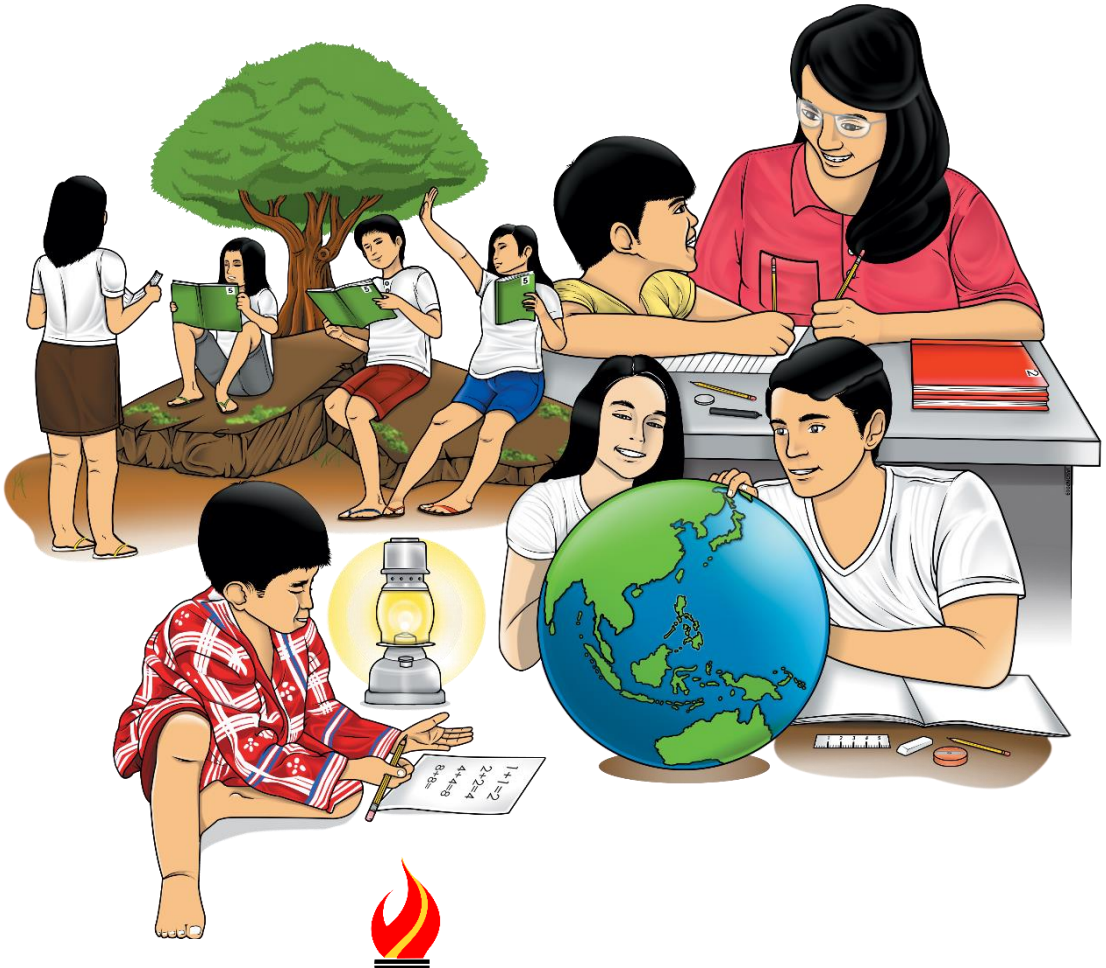
7/8

DepED
DEPARTMENT OF EDUCATION

TLE Masonry

Module 5:
Principles of Occupational Health and Safety Procedures



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Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners can continue your studies and learn while at home. Activities, questions, directions, exercise, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step by step as you discover and understand the lesson prepared for you.

Pre tests are provided to measure your prior knowledge on the lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post test to self check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text. Note to the teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put necessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module do not hesitate to consult your teacher or facilitator.

Thank you.

What I Need to Know

In this module, you will learn to follow the safety procedures in identifying hazards and risks in workplace. These can able you to determine the effects of hazards to immediate response of emergency-related drill. It is also intended to give you some guidelines and advice on common areas of health and safety problems in the industry and to help you gain a general awareness of your responsibilities as a worker in a safe environment.

The module is about:

- Lesson 1- Identify hazards and risks.
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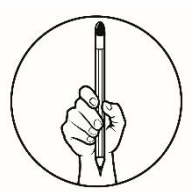
After going through this module, you are expected to:

1. list down hazards and risks in the workplace.



What I Know

Pre-Test

Let us determine what proportion you already realize hazards and risks.

Direction: Select the letter of the correct answer. Write your answers in your activity notebook.

1. It's simply the appliance of workable principles that increases the notice and skill of the workers to be more productive and efficient without sacrificing their safety and therefore the product quality.
    A. Occupational Health & Safety
    B. Risk Management
    C. Work Procedure
    D. Work Simplification

2. Which primarily uses least resources within the workplace?
    A. Occupational Health & Safety
    B. Risk Management
    C. Work Procedure
    D. Work Simplification

3. What agency is responsible primarily for setting and enforcing mandatory occupational health and safety standards through appropriate orders?
    A. Department of Public Works and Highways
    B. Civil Service Commission
    C. Department of Labor and Employment
    D. Department of Budget and Management

4. Which is NOT a PPE?
    A. helmets
    B. goggles
    C. clothing
    D. none of the above

5. Which is a common hazard?
    A. obstructions
    B. damaged saw blades
    C. hazardous dusts
    D. Gaseous

6. Which is a risk?
    A. Out-of-control cutting machine
    B. Vibration
    C. power cords
    D. beard, loose hair, loose clothing

7. Which of the following is a step on risk management?
    A. Identification of Safety Procedures
    B. Hazard Identification
    C. Training the Workers
    D. Education

8. It is considered as a control measure on accident prevention?
    A. Workplace communication and consultation
    B. Safety and health committee meetings
    C. Regular equipment and work safety checks
    D. Education

9. Which of the following emphasize on continuous training of the workers as hazard/risk management measure?
    A. Workplace safety and health.
    B. Emergency and first aid procedures
    C. Hazards and risks associated with work activities
    D. Education

10. Who are covered by the Occupational Health and Safety Regulations?
    A. Employers
    B. Workers
    C. Self-Employed
    D. All of the above

Lesson 1 Identify Hazards and Risks

Philippine Occupational Health and Safety laws place responsibility for workplace safety on employers, workers, self-employed people, people in control of workplaces, and the manufacturers and distributors of plant and equipment.

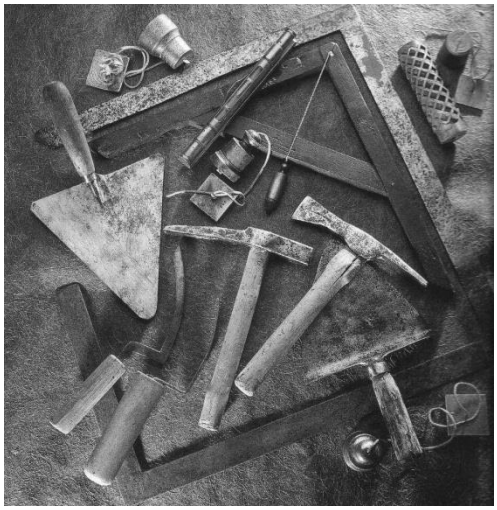
Employers must provide and maintain a working environment in which workers are not exposed to hazards as far as practicable.

Workers must take due care of their own safety and health which of others, follow safety instructions and use protective clothing and equipment as instructed.

What's In

Being in masonry work, you'll know how risky your life is every day. Minimizing these risks and maintaining health and safety in the workplace means being switched on and following safety protocols at all times.

In our previous lesson, we have discussed on how we store tools and equipment in their proper places to maintain safety environment in our work place. In this module, we will discuss the concepts and principles of occupational health and safety procedures.



Source: Pinterest. Working tools"Masonic Art"

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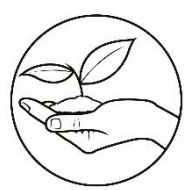
Notes to the Teacher

1. Occupational hazards can be controlled by a variety of methods.
2. The goal of controlling hazards is to prevent workers from being exposed to occupational hazards.
3. It is important to recognize hazards and health and safety problems in the workplace.



What's New

Activity 1: Identification. Read each statement carefully and provide the correct answer from the given choices. Write your answers on the space provided.

Unsafe grip, stance	Hand-held saw cutting above shoulder
Insufficient flow of coolant water	Insufficient guarding
Toxic fumes	Cutting concrete pipes
Electric wires, gas or water pipes	Noise
Wet, slippery floors	Hazardous dusts

_____ 1. Can cause the saw to swing of control and are available into contact with the operator.

_____ 2. emitted by cutting and drilling operations or equipment

_____ 3. reason overheating and expansion of both metal and masonry

_____ 4. can reduce operator control and increase the danger of kick-back, push-back or pull-in injury.

_____ 5. toxic gases can build up to hazardous levels

_____ 6. Removing guarding can greatly increase injury risk.

_____ 7. exposure to toxic gases, or explosion.

_____ 8. coolant water and slurry on floors can cause slips and falls.

_____ 9. excessive noise from concrete cutting and drilling is a workplace Hazard

_____ 10. requires special safe procedures to stop the pipe from rolling or moving during cutting.

What is It

Activity 2: Guide Questions:

Answer the following questions and write your answer in your activity notebook.

1. How can you recognize hazards in your workplace?

_____
_____
_____
_____

2. What is the best way to avoid hazard at the workplace?

_____
_____
_____
_____

3. What are the safety precautions you do while working at the workplace?

_____
_____
_____
_____

To prevent hazards at the workplace, use these three safe steps to help prevent accidents: (1) Spot the hazard – to identify a hazard that might be dangerous.(2)Assess the risk - means working out how likely is that a hazard will harm someone and the way serious the harm might be .(3) Make the changes

The Occupational Safety and Health laws of the Philippines require employers, main contractors, self-employed people and people on top of things of workplaces or access to workplaces, as far as practical, to (1) identify each hazard to which a person at the workplace is likely to be exposed; (2) assess the risk of injury or harm to a person resulting from each hazard; and (3) take action to control or reduce the risk.

Figure 1. Hazard in workplace

COMMON HAZARDS

Some hazards are common to all or any concrete and masonry cutting and drilling operations, however, there are also hazards specific to individual sorts of equipment, such as:

1. Kick-back, push-back, or pull-in – these are potentially violent forces that occur suddenly and may be difficult to regulate. They are presumed to cause injury when hand-held or „quick-cut" concrete or masonry saws are used, especially when chasing. They can also cause fixed concrete saws to be wrenched from their fittings, with the potential of the saw running free on the bottom.

2. Obstructions or resistance within the material being cut – these can cause sudden kick-back, push back, or pull-in movements of the saw.

3. Crooked or off-line cuts – these can cause the saw to bite or pinch leading to kickback, push-back, or pull-in reactions. These reactions also are presumed to occur with hand-held saws.

4. Pinched cuts – these are caused when the thing being cut moves, leading to the cutting groove tightening on the saw blade, thus increasing the danger of kick-back, etc.

5. Blunt cutting edges – these are caused by using a saw blade or drill bit with the wrong diamond cutting bond. If the bond or matrix holding the cutting diamonds together is just too hard for the fabric being cut, the bonding material doesn't wear away quickly enough, resulting in the surface diamonds becoming blunt. This means extra force has got to be applied by the operator, especially with hand-held saws, increasing the risk of kick-back, push-back, or pull-in.

6. Unsafe grip, stance, or stop-start procedures for hand-held saws – these can cause the saw to swing of control and are available into contact with the operator, or strike objects which will cause the saw to fall and run free on the bottom.

7. Worn, misshapen, cracked, or damaged saw blades or the wrong type of blade – these can cause the blade to wobble, vibrate, shatter, or fragment and fly off. Guarding on most concrete and masonry equipment is meant to guard the operator against flying blade fragments, but not others within the workplace. Guarding should, therefore, not be regarded as a total safeguard. Blades are presumably to disintegrate when force is employed, for instance when the diamond leading edge becomes dull, an obstruction is encountered, the cutting groove isn't straight or the blade is pinched.

8. Worn blade shaft – incorrectly fitted blades or the incorrect sort of blade for the work can cause a decline in the central shaft causing even new blades to shudder, leading to early wearing and risk of shatter.

9. Wrong-size blades – these are blades either too large, too small, or the wrong type for the cutting machine or size and shape of the concrete or masonry item being cut. For example, a little diameter blade wont to cut a thick slab might not penetrate sufficiently; increasing the danger of kick-back or blade-shatter should the blade strike resistance.

10. Hazardous dust – these are emitted by cutting and drilling operations or equipment that does not use water for cooling cutting parts and capturing dust. Concrete dust may carry high levels of silica dust and repeated exposure can cause silicosis, which may be scarring and stiffening of the lungs. The effects are irreversible, invariably resulting in death.

11. Insufficient flow of coolant water – this may cause overheating and expansion alongside metal and masonry, resulting in poor performance, jamming, severe blade damage, and projectile hazards.

12. Incompatible flanges and blades – these can cause uneven blade movement, wear and tear and the risk of blade-shatter.

13. Incorrectly secured blades – these are caused by nuts and flanges which aren't tightened sufficiently on the saw shaft, which may cause uneven blade movement and therefore the risk of blade-shatter.

14. Inadequate securing of anchor points – these can cause a fixed saw to break free from its track fittings.

15. A beard, loose hair, or loose clothing – these can cause the operator to become entangled with moving saw blades, drill bits and other moving parts.

16. Hand-held saw cutting above shoulder or below knee-height – this will reduce operator control and increase the danger of kick-back, push-back, or pull-in injury.

17. Cutting concrete pipes – this needs special safety procedures to stop the pipe from rolling or moving during cutting, particularly when a handheld saw is employed. A specific hazard during pipe cutting is pressure from the raised flange on the pipe-end causing the move close and pinch the saw blade, leading to kick-back or blade shatter injury.

18. Toxic fumes – without adequate ventilation, petrol motor emissions containing carbon monoxide and other toxic gases can build up to hazardous levels.

19. Insufficient guarding – guarding on some concrete or masonry saws is more effective than on others. When purchasing, consider the adequacy of guarding. Part of a secure work procedure should be to make sure that the manufacturers recommended guarding is fitted to such saws. Removing guarding can greatly increase injury risk.

20. Electric wires, gas, or water pipes – uncovering services, especially in existing construction, can put the operator in peril of slipping, electrocution, coverage to toxic gases, or explosion.

21. Power cords – when attached to electric-powered cutting equipment and other machinery, these may be cut or damaged. Pools of water coolant and slurry could cause electrocution due to an immersed cord.

22. Uneven or unstable surfaces – these can upsurge the possibility that the operator may trip or stumble, causing an unexpected movement of the blade resulting in kickback.

23. Wet, slippery floors – coolant water and slurry on floors can cause slips and falls.

24. Obstructions in access ways – blocks of masonry and bricks in areas where the operator and others must stand, work, or move can cause trips and falls.

25. Vibration – whole body or hand or arm vibration caused by prolonged use of cutting or drilling equipment can cause nerve, circulatory, and joint damage.

26. Working alone – this can be hazardous because of the potential need for assistance in the event of an emergency situation or injury.

27. Noise – excessive noise from concrete cutting and drilling is a workplace hazard.

COMMON RISKS

Various hazards that masons are exposed to commonly, include:

- Slips, trips, and falls
- Falling heavy objects
- Collapsing or cave-in of excavations
- Collapse or cave-in of walls
- Sharp or protruding objects, like a plank with nails in it
- Contact with and exposure to extreme temperatures
- Electrical shocks
- Exposure to noxious chemicals
- Over-exposure to building dust
- Moving, lifting, or carrying heavy objects

RISK MANAGEMENT

How do we control risks?

1. Hazard Identification. This includes, but not limited to, regular review of safety procedures for each type of equipment and job, regular checking of information, regular inspection of equipment before each job, and checking the possible presence and location of obstructions.

2. Risk Assessment. Evaluating risks involve calculating the likelihood and severity of injury or harm resulting from identified hazards.

3. Controlling Risks. Control risks by introducing safety measures to eliminate or minimize the risk of a person being exposed to a hazard.

Safety Precautions Can Reduce Workplace Injuries

To address these hazards, masons should employ subsequent preventive measures when performing on construction sites:

- Install sturdy work surfaces, in order that they're going to not collapse/break, then nobody or object may fall from them.
- Safety shoes with rubber soles must be worn.
- Wear additional personal body protection equipment (PPE) like safety helmets, shoes, goggles, and therefore the like.
- Ensure work surfaces, passageways, and floors are clear of protruding nails, free wires, debris, and other potential hazards.
- Avoid lifting of heavy loads and use mechanical lifting equipment.
- Wear work clothes, gloves, and safety outfits whenever handling hot or cold materials.
- Drink enough water to avoid dehydration.
- Always check the security of your portable electric tools. Avoid using defective portable electric work tools that don't have proper insulation.
- Minimize contact with harmful materials. Use products that protect the skin, and wash hands thoroughly at the top of the shift. Use coated cotton gloves instead of leather gloves when necessary.
- Use respiratory protection equipment like respirators and air masks that are compatible with the precise sort of air pollutant presumably present in your working environment.

Here are some example of respiratory protection equipment:

1. *N95 mask dust*

Figure 2mask dust

2. Air Purifying Respirator

Figure 3air purifying respirator

There are five (5) types of sign and symbolsl in to prevent hazard in workplace:

1. Danger signs

Figure 4: Danger sign

2. Directional signs

Figure 5 directional sign fire exit

3. Caution signs

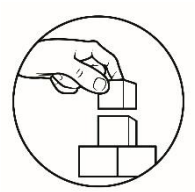
Figure 6 caution sign

4. Notice signs

Figure 7: notice sign

5. Safety instruction signs

Figure 8 safety sign



What's More

Activity 3

Direction: A. TRUE OR FALSE: Read and analyze each statement below. Write **TRUE** if the statement is correct and **FALSE** if the statement is incorrect on the space provided.

_____ 1. Workers must take reasonable care of other safety and health and follow safety instructions and do not use protective clothing and equipment as instructed.

_____2. Employers must not provide and maintain a working environment in which workers are exposed to hazards as far as practicable.

_____ 3. It is important that training for operators includes awareness of safe work practices and therefore the risks of kick-back.

_____ 4. Insufficient acquiring of anchor points can cause a fixed saw to break free from its track fittings.

_____ 5. Excessive noise from concrete cutting and drilling is a workplace hazard.

What I Have Learned

You are about to complete this module, I am sure you may able to answer the following questions:

1. What is your personal training for your own safety when working?

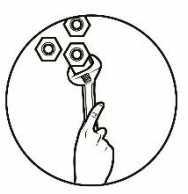
_____
_____
_____

2. What are the other safety measures that you apply when working?

_____
_____
_____

3. What are the safety precautions that you are observing?

_____
_____
_____



What I Can Do

Suppose to be you are a mason and you are in a workplace. Describe one unsafe situation you may encounter.

1. What if there is someone injured or health problem could result hazardous in your workplace? What will you do?

_____
_____
_____
_____

2. How can you prevent an accident to happen?

_____
_____
_____
_____

Assessment

Post-Test

Let us determine what proportion you already realize hazards and risks.

Direction: Select the letter of the correct answer. Write your answers in your activity notebook.

1. It's simply the appliance of workable principles that increases the notice and skill of the workers to be more productive and efficient without sacrificing their safety and therefore the product quality.
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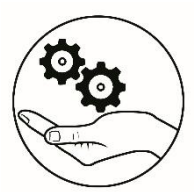

Additional Activities

Activity 4

Tools word search. Find the five (5) common hazards encountered in masonry.

N	**D**	**G**	**E**	**T**	**Y**	**D**	**H**	**R**	**T**
E	**O**	**G**	**D**	**G**	**S**	**E**	**A**	**O**	**P**
W	**F**	**I**	**G**	**G**	**T**	**V**	**X**	**F**	**O**
F	**H**	**J**	**S**	**L**	**U**	**I**	**O**	**U**	**W**
K	**H**	**L**	**J**	**E**	**C**	**B**	**J**	**Y**	**E**
O	**P**	**P**	**I**	**F**	**D**	**R**	**N**	**H**	**R**
L	**J**	**G**	**U**	**U**	**E**	**A**	**F**	**V**	**C**
K	**V**	**M**	**Y**	**Y**	**H**	**T**	**Y**	**Y**	**O**
H	**E**	**F**	**R**	**Y**	**C**	**I**	**H**	**S**	**R**
S	**L**	**D**	**D**	**S**	**N**	**O**	**R**	**E**	**D**
L	**L**	**K**	**V**	**C**	**I**	**N**	**F**	**O**	**S**
S	**E**	**T**	**F**	**G**	**P**	**D**	**F**	**E**	**A**

1. _____
2. _____
3. _____
4. _____
5. _____

Answer Key

Activity 3

1. False
2. False
3. True
4. True
5. true

Activity 1

1.Unsafe grip, stone
2.Hazardous dusts
3.Insufficient flow of coolant water
4.Hand-held saw cutting above
5.Toxic fumes
6.Insufficient guarding
7.Electric wires, gas or water pipes
8.Wet, slippery floors
9.Noise
10.Cutting concrete pipe

Pre-test

1. D
2. D
3. C
4. D
5. D
6. A
7. B
8. D
9. D
10. D

ACTIVITY 4

NOISE
TOXIC FUMES
POWER CORDS
VIBRATION
PINCHED CUTS

Post-Test

1. D
2. D
3. C
4. D
5. D
6. A
7. B
8. D
9. D
10. D

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