

Curriculum Masters and Overheads

Lesson 3 Proposing Solutions

Health and Safety Awareness for Working Teens in Agriculture

Dept of Environmental and Occupational
Health Sciences
School of Public Health and Community Medicine
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Lesson 3

Proposing Solutions



Prevention Strategies: Warm-Up Discussion

Employer Responsibilities include:

- Following the law
- Reducing and eliminating hazards
- Assigning appropriate job tasks
- Training employees on how to do their job tasks safely
- Training employees on what to do in an emergency or if an accident occurs
- Maintaining and equipping machines so they operate safely
- Providing personal protective equipment if it is needed to do work safely

Activity 3A Intro to Prevention Strategies: Warm-Up Discussion

Prevention Strategies: Warm-Up Discussion

Employee Responsibilities include:

- Following your employers safety and health rules and wearing or using all required gear and equipment
- Following safe work practices for your job, as directed by your employer and/or supervisor
- Asking questions!
- Telling your supervisor, boss, parent or other adult if you feel threatened or endangered at work
- Being aware of your environment at all times
- Being involved in establishing or improving your worksite safety and health program
- Trusting your instincts and evaluating your decisions

Prevention Strategies: Warm-Up Discussion CLEVER Definitions

- There are many ways to eliminate or minimize workplace hazards and prevent work-related injuries and illnesses.
- Sometimes more than one method may be necessary.
- The methods that offer the most protection should be used first.
- There are several ways to categorize hazards, but for this curriculum we will use the CLEVER categories as a guide.

Master 3.1 CLEVER Definitions

C - Change: Change the way a job or task is done by changing the type of job or the job environment.

L - Laws: Enforce laws that control hazards or regulate working conditions for teens, such as hours or types of jobs worked.

Eq - Equipment: Use personal protective equipment (such as gloves, goggles, respirators, overalls, etc) or safety devices.

V - Voice: Speak to someone about workplace hazards. Tell supervisors when you are not comfortable or don't feel safe doing a job or task. Tell an adult (parent or teacher) if a problem exists at work.

Ed - Education and Supervision: Educate and train about job tasks and hazards and have adequate supervision for relevant tasks.

R - Remove: Remove or eliminate a hazard altogether by removing (engineering out) the object, tasks, or practice.

C - Change: Change Equipment or Processes

Change how a job or task is done by changing the type of job or the job environment

The best way to correct hazardous situations is to engineer the problems out. That means using or changing equipment to make the job safer. Because engineering solutions are permanent, they are the first, best choice for increasing safety.

C - Change: Change Equipment or Processes

Examples

- Change the way work is done by using safer materials and processes, such as installing guards on power equipment to protect workers' hands or using less caustic cleaning fluids.
- Keep the hazard away from the workers by enclosing it, guarding it, or putting it at a distance.
- Improve air circulation and ventilation to minimize exposure to harmful fumes, such as those from solvents or acids.

L - Laws: Laws and Work Rules

Enforce laws that control hazards or regulate working conditions for teens, such as hours or types of jobs worked.

Changing work procedures can help to control hazards, but only if workers follow the procedures. To make sure workers follow safe procedures, employers may write rules requiring employees to use these practices. The employers enforce these rules themselves. In other cases, the government has written laws to try to prevent workers from being exposed to hazards, such as dangerous equipment or chemicals. Employers or workers who do not follow these laws may face legal penalties, such as fines.

L - Laws: Laws and Work Rules

Examples

- Restricting employees who are inexperienced from doing certain types of tasks. For example, workers younger than age 18 are not allowed to operate forklifts or use power tools, such as saws.
- Requiring employees to change tasks from time to time during the work shift so they don't overexert themselves.
- Shorten work shifts to minimize exposure to hazards.

E - Equipment: Personal Protective Equip (PPE)

Use personal protective equipment such as gloves, goggles, respirators, overalls, etc) or safety devices.

PPE includes any equipment a worker wears to reduce exposure to hazards.

Workers should only use PPE when a hazard can't be engineered out permanently or eliminated by changing the way a job is done.

Remember, the best way to prevent injuries and illnesses is to remove the hazards permanently.

E - Equipment: Personal Protective Equip (PPE)

Examples

- **ear plugs or muffs** (protect ears from loud noises that can damage hearing)
- **goggles or safety glasses** (protect eyes and face from cuts, chemical burns, or other injuries)
- **respirator** (protect nose and lungs from dangerous fumes or particles)
- **gloves** (protection depends on the type of glove; some protect hands from chemical burns, others from cuts and scrapes)
- **hard hats** (protect head from injuries that may occur if a worker falls, or is hit by falling materials or equipment, or by flying debris)

V - Voice: Speaking Up

Speak to someone about workplace hazards. Tell supervisors when you are not comfortable or don't feel safe doing a job or task. Tell an adult (parent or teacher) if a problem exists at work.

Speaking up about workplace hazards can help prevent injuries. Speaking up means asking questions reporting hazards and injuries, talking to your supervisor or parents when you have safety concerns, and asserting your rights under the law. Before you speak, it's important to think about the most effective way to express yourself.

V - Voice: Speaking Up

Examples

- Telling your parent or guardian that you are worried about hurting yourself at work when your boss tells you to do a certain task (such as working alone at night, operating equipment you haven't been trained to use, lifting heavy boxes, using harsh chemicals, etc.)
- Letting your supervisor know that you can't operate some kinds of equipment (such as a meat slicer or power saw) because of your age.
- Letting your supervisor know that you have not been trained to do certain tasks, if asked to do them.

E - Education: Education and Supervision

Educate and train about job tasks and hazards and have adequate supervision for relevant tasks.

Educating workers by providing them specific training on how to do a specific task or job. Supervision means having adequate supervision of employees for the work they are doing.

E - Education: Education and Supervision

Examples

- Requiring an employee to go through training on how to work a specific type of equipment.
- Training employees that are minors which pieces of equipment they can not work with.
- Providing cashier training on what to do if held up or robbed.
- Requiring that an adult supervisor always be on shift.

R - Remove

Remove or eliminate a hazard altogether by removing (engineering out) the object, task or practice.

Removing or eliminating hazards by re-engineering equipment so it is safer or using a less hazardous chemical or product to do the job.

R - Remove

Examples

- Replacing a solvent based cleaning product that gives off odors with a less hazardous water based product that does the same job.
- Building a sound shield around a loud piece of equipment to cut down on the noise in the workplace.

Activity 3B The CLEVER Game - Rules

CLEVER Game Rules

1. The teacher will read a scenario to the class.
2. Students should not talk or write anything down until the scenario has been read and the teacher says, “Go.”
3. Then the students start writing CLEVER solutions that would reduce or eliminate the hazard(s) in the scenario.
4. The Recorder writes down the team’s solutions on Post-it notes, one suggestion per note.
5. Each solution should be written as a complete sentence.
6. The Runner places each Post-it on the correct section of the CLEVER game board posted in the room by the teacher.

Activity 3B The CLEVER Game - Rules

CLEVER Game Rules

7. Teams should try to come up with as many solutions as possible.
8. After a few minutes, the teacher signals the end of the round.
9. The teacher scores the round by reading answers aloud and deciding whether they are acceptable (realistic, feasible, and effective).
10. If an answer is acceptable, the teacher awards the appropriate CLEVER tile for each suggestion (e.g. C for a Change answer).
11. The first team that spells CLEVER with the letter tiles wins the game.
12. Each round uses a new scenario.

CLEVER Acceptable Answers

Acceptable answers should meet the following criteria:

- Answers should be complete. For example, “Enforce Laws” for the Laws category or “Speak to the supervisor” for the Voice category will not be considered complete answers. The solution should explain what kind of law needs to be enforced or what the worker should say or speak to the supervisor about.
- Answers should be realistic. For example, students can't say “Remove the boss” for the Remove category.
- Answers should be appropriate to the category. For example, a strategy related to adding safety equipment should not be placed in the Remove category. Some solutions may fit into more than one category.

CLEVER Safety Committee Meeting Introduction

Who: You are the members of a safety committee.

Why: Your goal is to make recommendations to prevent future injuries or illnesses.

What: The employer's insurance company wants the committee to make recommendations in the six CLEVER categories.

***Note:** Answers should be given in complete sentences and must be realistic, feasible, and effective.

CLEVER Acceptable Answers

Acceptable answers should meet the following criteria:

- Answers should be complete. For example, “Enforce Laws” for the Laws category or “Speak to the supervisor” for the Voice category will not be considered complete answers. The solution should explain what kind of law needs to be enforced or what the worker should say or speak to the supervisor about.
- Answers should be realistic. For example, students can't say “Remove the boss” for the Remove category.
- Answers should be appropriate to the category. For example, a strategy related to adding safety equipment should not be placed in the Remove category. Some solutions may fit into more than one category.

Activity 3C CLEVER Safety Committee Meeting Worksheet

Directions: As a safety committee, determine possible strategies that would prevent a future injury or illness such as this.

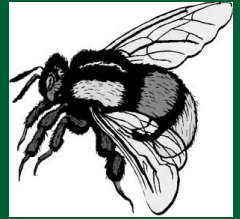
- **Change:** Are there changes to the way a job or task is done that can be made?
- **Laws:** Are there laws in place to prevent this from happening? If so, what do they say? Were laws enforced?
- **Equipment:** Is there any equipment that could have been work or installed that would have prevented the injury or illness?
- **Voice:** Could the injured/ill person have said something ahead of time to prevent this from happening?
- **Education and Supervision:** What kind of training and supervision could be implemented to prevent the injury?
- **Remove:** Are there materials, objects, tasks or practices that could be eliminated that could have prevented this problem?

CLEVER Safety Committee Meeting Discussion Questions

- Why did the committee decide these were the best recommendations?
- What strategies do you think would be the easiest to implement? The most difficult?
- What recommendations do you think would be the most effective? Why?

Master 3.4A CLEVER Scenario - Roger

Roger, 14, was checking on one of his family's carrot seed fields which was in bloom and being pollinated by rented bees. He disturbed some bees drinking from an irrigation ditch and was stung several times. The next day, Roger broke out in welts. Although he was not allergic to bees before, he had developed a severe allergic reaction to bees due to this incident. He now has to carry an epinephrine pen in case he is ever stung in the future.



Master 3.5A CLEVER Scenario - Adam and Emily

Adam, 14, and Emily, 15 were working for a cherry farm sorting and packing cherries. They often worked inside a fruit packing shed where ammonia was used as a coolant to lower the shed's temperature. One day someone mixed too much ammonia into the atmosphere coolant. Adam, Emily and their co-workers began experiencing dizziness and nausea with some of them even passing out or vomiting before the shed was evacuated.



Master 3.6A CLEVER Scenario - Brett

Brett, 16, was driving a tractor towing a small hay baler on a two-lane, public paved road with the right wheels partially on the gravel shoulder. The tractor hit a soft spot in the gravel and overturned down the steeply banked shoulder. Brett attempted to jump clear of the tractor but instead became pinned under it. Another motorist witnessed the event and phoned for help. Although emergency medical personnel responded Brett was pronounced dead at the scene.



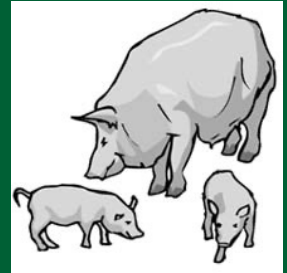
Master 3.7A CLEVER Scenario - Caroline

Caroline, 15, works at a small Christmas tree farm during the year. In the winter she brings trees in for display to the main shop and helps customers haul trees to their cars. Recently her back has started to hurt when she carries the trees. Sometimes there is someone to help her carry a tree in but she often brings the trees in on her own. The cold weather also seems to aggravate the developing pain.



Master 3.8A CLEVER Scenario - Ian

Ian, 14, was in a pen with a sow and piglets, passing the piglets out one at a time to his father who would castrate them and hand them back. At first the sow didn't seem to mind but later became upset and lunged after Ian. He scrambled to climb out of the pen, caught his toe on the top rung of the fence and fell flat on his face and chest outside the pen. Although he had the wind knocked out of him, he suffered no serious injuries from the fall or the sow.



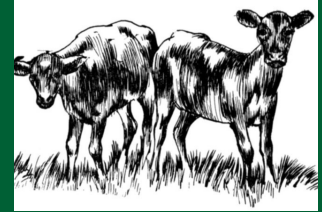
Master 3.9A CLEVER Scenario - James and Kevin

James and Kevin, ages 16 and 17, were hired to work at a local dairy farm. One day they climbed up one of the 80 foot high silos that was filled with chopped alfalfa for cattle feed, to check on how much room was left in the silo. Because they were in a hurry, James forgot to turn on the blower ahead of time to make sure the silo was ventilated. After opening the hatch on top of the silo, James was overcome by toxic gasses that were released by the fermenting alfalfa, and fell 10 feet down into the silo. Kevin attempted to rescue him by going in after him, but was also overcome by the fumes and lack of oxygen. Although the fire department tried to rescue them, both boys died from exposure to toxic gasses and asphyxiation.



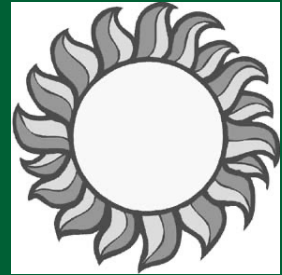
Master 3.10A CLEVER Scenario - Nathan

Nathan, 16, was helping feed the heifers on his uncle's cattle farm where he was working for the summer. His aunt brought him lunch which he ate at the barn. Because he was really hungry he didn't wash up first. Beginning the next morning, Nathan experienced three days of fever, diarrhea and abdominal cramps before he went to a doctor who told him he had salmonella. A test on several of the farm's heifers confirmed the presence of salmonella in the herd at the barn.



Master 3.11A CLEVER Scenario - Mark

Mark, 14, spends approximately eight hours a day outdoors in the sun working for a lawn care company during the months of June through August. In October he noticed that a mole on his nose had gotten bigger. After telling his parents, he went to the doctor and was diagnosed with skin cancer.



Master 3.12A CLEVER Scenario - Jason

Jason, a 17 year old orchard worker, was working near an irrigation canal. The canal was made of concrete, was 3 feet wide with 2.5 foot vertical walls and had about a foot of fast moving water (25-30 mph) flowing through it. Jason slipped and fell into the canal and was swept down the chute into a pool with 16 inch high cement pillars whose purpose is to slow the water. An adult co-worker tried to rescue him but they both drowned.



Master 3.13A CLEVER Scenario - Jen

At age 14 Jen began working for a landscaping company that did general care for business and private properties. After a few weeks, Jen noticed that her forearms were often weak and sore after long periods of weeding and her knees felt stiff as well. After a particularly long day working in the flower beds Jen went home and iced her arms. She could barely make a fist due to the soreness in her arms.



Master 3.14A CLEVER Scenario - Jerry

Jerry, 15, had learned how to graft plants in his ag class at school. His employer asked him to practice his skills on a few of the plants on his property. He was grafting two stems together using a basic cut but didn't have a guard to put around the stem to limit the knife penetration. When he went to make the incision in the stem, he slipped and cut his finger that was holding the stem.



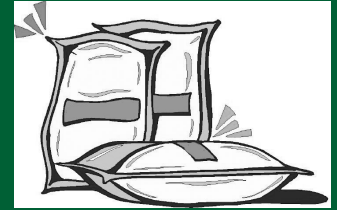
Master 3.15A CLEVER Scenario - Sean & Lisa

Sean, 17, was showing some friends the fruit farm where he worked. He took them into a recently opened controlled atmosphere (CA) storage room with large bins in it. Sean and his friend, Lisa, began climbing a bin. Sean reached the top but then passed out. Lisa fell from half way up. The friends took Lisa out and called 911. EMT's using oxygen masks removed Sean and a police officer that had tried to rescue him. Lisa had minor injuries from her fall but Sean later died due to prolonged lack of oxygen.



Master 3.16A CLEVER Scenario - Tina

Tina, a 16-year-old stock handler, was employed at a local nursery. One afternoon she was restocking the garden shop shelves with bags of insecticide-containing fertilizer when she accidentally inhaled dust from a leaking bag. A short time later she began to choke, cough and feel light headed. The following morning when her symptoms had not disappeared, she was taken to the emergency room where she was treated for insecticide and fertilizer inhalation.



Master 3.17A CLEVER Scenario - Alison

Alison, 15, works the morning shift on her parents dairy farm. Although they usually kept the milking parlor fairly warm, it had been an extremely cold winter that year and her fingers were constantly cold despite her gloves. One morning she slipped and fell on ice on the parlor floor and bruised her tailbone. The ice had formed as a result of the spray down cleaning from the previous shift.



Master 3.18A CLEVER Scenario - Sam and Janelle

After using a bench-top electric wire brush wheel, Sam, 16, turned the machine off and left the work space to complete his project. Janelle, a friend of his walked into the shop to visit. As she passed by the wire brush wheel her long hair became caught up in the still turning machine. The wheel jerked her hair so hard and fast that it not only pulled her hair out but actually removed a portion of her scalp as well.



Master 3.19A CLEVER Scenario - Jose and Peter

Two students Jose, 16 and Peter, 15, were cutting sheet metal in shop class with a shearing machine. Jose was fairly lightweight and was having a difficult time compressing the pedal that moves the machine. Peter was helping by stepping on the pedal for Jose. For one of the cuts, when Peter stepped down on the pedal he caught Jose's toes under the pedal, smashing two toes. Jose had to be taken to the hospital for treatment.

