Unit 4

Making the Job Safer



Unit 4 Overview

This unit introduces three key strategies that can be used to reduce or eliminate hazards from the workplace. The three main control methods emphasized in the lesson are: removing the hazard, improving work policies and procedures, and using protective clothing and equipment. The lesson emphasizes which methods are more effective than others. Using scenarios based on real workplace incidents that have occurred with teens, students play a competitive brainstorming game to introduce these concepts.

Activity A. Student Pre-Test—Making the Job Safer

Students complete the pre-test as a measure of what they already know about injury prevention strategies before the lesson is taught.

Activity B. Introduction to Controlling Job Hazards

Using a discussion format, students are introduced to the three methods of controlling workplace hazards (removing the hazard; improving work policies and procedures; and using protective clothing and equipment). Students also learn which of these three control methods are more effective and provide more protection to the worker.

Activity C. \$25,000 Safety Pyramid Game

Using a game, students brainstorm examples of controls that could be implemented to prevent potential workplace accidents from occurring. This game utilizes accident scenarios taken from real restaurant accidents. Students earn points based on the types of controls they identify.

Activity D. Student Post-Test—Making the Job Safer

Students complete a post-test as a measure of what they have learned as a result of presenting unit 4.

Washington State Essential Academic Learning Requirements (EALRs)

Health and Fitness

- 2.2 Understand the concept of control and prevention of disease
- 2.3 Acquire skills to live safely and reduce health risks
- 3.1 Understand how environmental factors affect one's health
- 3.2 Gather and analyze health information
- 3.3 Use social skills to promote health and safety
- 4.1 Analyze health and safety information

Reading

- 1.1 Use word recognition and meaning skills to read and comprehend text
- 1.3 Read fluently, adjusting reading for purpose and material
- 2.1 Demonstrate evidence of reading comprehension
- 3.4 Read for career applications

Communication

- 2.1 Communicate clearly to a range of audiences
- 3.1 Use language to interact effectively and responsibly with others
- 3.2 Work cooperatively as a member of a group
- 3.3 Seek agreement and solutions through discussion
- 4.4 Analyze how communication is used in career settings

Social Studies (Civics)

- 2.2 Understand the function and effect of law
- 4.1 Understand individual rights and their accompanying responsibilities

Science

- 2.2 Apply science knowledge and skills to solve problems or meet challenges
- 3.2 Know that science and technology are human endeavors, interrelated to each other, to society, and to the workplace

Making the Job Safer

Time

45 minutes

Materials

- Flipchart or whiteboard and markers
- PowerPoint slides (1–10)
- Computer and projector
- Game board score sheet
- Post-it notes (a different color for each team)
- Watch or timer
- Prizes

Handouts

- A. Making the Job Safer Pre-Test
- B. Making the Job Safer Post-Test
- C. Making the Job Safer Pre- and Post-Test Answer Key

Learning Objectives

By the end of this lesson students will be able to:

- Describe the three main ways to reduce or eliminate hazards at work.
- Explain which methods are most effective in controlling hazards.

Preparing to Teach This Lesson

Before you present this lesson:

1. Make copies of handout A *Making the Job Safer Pre and Post-Tests.*

2. Obtain a flipchart and markers, or use a white board.

3. Locate the PowerPoint slides for the unit on your CD and review. Prior to teaching the activity review the stories for each game round.

- 4. For the \$25,000 Safety Pyramid Game, draw a game board in advance on flipchart paper as pictured in section C, and tape it to the wall or put it up on the board.
- 5. Obtain pads of Post-it notes (a different color for each team), a watch or timer, and prizes (such as candy).

Detailed Instructor's Notes

Activity A. Making Restaurant Jobs Safer Pre-Test (Handout A)

Procedure:

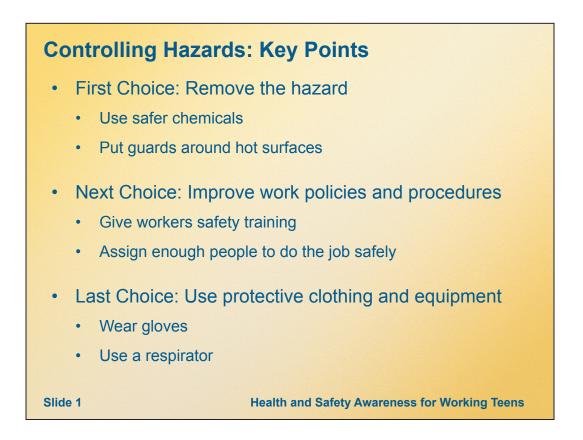
- 1. Distribute copies of handout A, *Making the Job Safer Pre-Test*, to students prior to introducing any of the material in unit 4.
- 2. Collect the pre-test right after its completion. Keep it on file until the *Post*-*Test* is completed at the end of unit 4.
- 3. Answers to the pre- and post-test can be found in handout *C*, *Making the Job Safer Pre- and Post-Test Answer Key*.

Activity B. Introduction to Controlling Job Hazards

- On a piece of flipchart paper or on the board, create a table with two columns. Head the left column "Hazards" and the right column "Possible Solutions."
- 2. Pick one job hazard commonly found in restaurant work settings. Write it in the "Hazards" column of the table. (For example, you might write "slippery floors.")
- 3. Ask the class: How can this workplace hazard can be reduced or eliminated?
- 4. As students suggest answers, write them in the "Possible Solutions" column next to the hazard. Possible solutions for slippery floors might include the following:
 - Put out caution signs
 - Clean up spills quickly
 - Install slip-resistant flooring
 - Use floor mats
 - Wear slip resistant shoes or shoe covers
 - Install grease guards on equipment to keep grease off the floor.
- 5. Explain to the class that there are often several ways to control a hazard, but some are better than others. Hold a class discussion about the three main control methods:
 - Remove the hazard
 - Improve work policies and procedures
 - Use protective clothing and equipment.

Note: Because the purpose of this lesson is to simply use it as a brainstorming session for your students, they are not expected to know specific details (e.g., how to appropriately use personal protective equipment).

6. Use PowerPoint slide 1 and the sections below to help explain the three control methods in more detail. After you discuss a method, apply it to the list you created on the chart or board, as indicated.



Remove the Hazard

The best control measures remove the hazard from the workplace altogether or keep it isolated away from workers so it can't hurt anyone. This way, the workplace itself is safer, and all the responsibility for safety doesn't fall on individual workers.

Here are some examples:

- Use safer chemicals and get rid of hazardous ones
- Store chemicals in locked cabinets away from work areas
- Use machines instead of using jobs by hand
- Have guards around hot surfaces
- 1. Ask the class:

"Which of the solutions on the flipchart example really get rid of the hazard of slippery floors?"

- 2. Students should answer that installing slip-resistant flooring, floor mats and grease guards are items on the list that really remove the hazard.
- 3. On the flipchart, put a "1" next to these solutions.

Improve Work Policies and Procedures

If you can't completely eliminate a hazard or keep it away from workers, good safety policies and procedures can reduce your exposure to hazards.

Here are some examples:

- Require safety training on how to work around hazards
- Regular breaks to avoid fatigue
- Assigning enough people to do the job safely (e.g., lifting)
- 1. Ask the class:

"Which of the solutions for slippery floors on the flipchart involve work policies and procedures?"

- 2. Students should answer that putting up caution signs and cleaning up spills quickly are in this category.
- 3. On the flipchart put a "2" next to these solutions.

Use Protective Clothing and Equipment

Personal protective equipment (often called "PPE") is the least effective way to control hazards. However, you should use it if it is the only option you have.

Here are some examples:

- Gloves, steel-toed shoes, hard hats
- Respirators, safety glasses, hearing protectors
- 1. Ask the class:

"Why should personal protective equipment (PPE) be considered the solution of last resort?"

- 2. Answers may include the following:
- PPE doesn't get rid of or minimize the hazard itself
- Workers may not want to wear it because it can be uncomfortable, hot, and may make it hard to communicate or do work
- PPE must fit properly and be used consistently at the right time to work
- PPE must be right for the particular hazard, such as the right respirator cartridge or glove for the chemical being used
- 3. Ask the class:

"Which of the solutions for slippery floors on the flipchart involve protective clothing and equipment?"

- 4. Students should answer that wearing slip-resistant shoes is in this category.
- 5. On the flipchart, put a "3" next to this solution.

Hazard	Possible Solutions
Slippery floors	Put out caution signs (2)
	Clean up spills quickly (2)
	Install slip-resistant flooring (1)
	Use floor mats (1)
	Wear slip-resistant shoes (3)
	Install grease guards on equipment (1)

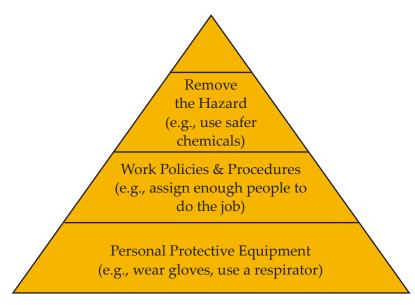
When you have finished marking the three categories on the flipchart, your completed table will look something like this:

Tell students that they will learn more about these control methods during the next activity. They will play a game called the \$25,000 Safety Pyramid.

Activity C. \$25,000 Safety Pyramid Game

Note: If you wish, you can present this material as a class discussion instead of in a game format. Show PowerPoint slides 2–10 to the class. For each slide, ask students for their ideas about possible ways to prevent the injuries described.

1. If you are presenting the material as a game, draw a game board like the one below on the board or on a piece of flipchart paper, and tape it to the wall.



\$25,000 Safety Pyramid Game Rules

2. Explain that in each round of the game, you will read aloud a true story about a youth who got injured at work. Students will work in teams. Teams should think of themselves as safety committees, responsible for finding ways to control the hazard that caused the injury described.

Notice that the pyramid divides solutions into three categories:

- Remove the Hazard (often called engineering controls)
- Work Policies (often called administrative controls)
- Personal Protective Equipment (PPE).
- 3. Select teams of 3–5 participants each. Ask each team to come up with a team name. Record team names on the board or on a sheet of flipchart paper, where you will also keep track of the points. Give a different color Post-it note pad to each team.
- 4. Go over the game rules; because this game often causes teams to become quite competitive, it is very important to go over the rules before playing the first round.
 - Explain that this is a fast-paced game and time counts. After you read each story, the teams will have one minute (you may want to give them longer) to come up with solutions and post them on the game board.
 - One team member should be chosen as the "writer" for the team. Each solution the team comes up with should be written on a separate Post-it note. Another team member should be chosen as a "runner" who will post the team's notes in the correct categories on the game board.
 - Emphasize that in order to get points, their answers must be written in complete sentences. This will help eliminate ambiguous or vague answers and make your role as the judge easier. Let the teams know that if their answers are incomplete you have the option of not counting them.
 - Tell the class that you will decide whether each solution is a good one. To be valid, the solution must relate to the story, be realistic, and be specific about the solution (for example, not just PPE, but what kind of PPE).
 - Remember that some solutions may fall in more than one category. The same solution written on two Post-its placed in two categories should count once. Tell the class that in some cases there may be no good solutions in some of the categories. Explain that if teams put a good solution in the wrong category, you will move that Post-it to the proper category and give them the points.

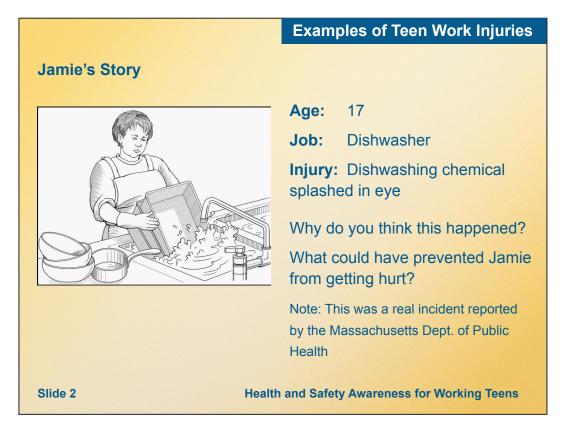
• Explain that, after each round, you will tally the points. Each valid solution in the "Remove the Hazard" category is worth \$2,000; each valid solution in the "Work Policies" category is worth \$1,000 and in the "Personal Protective Equipment" category, \$500, because these are usually less protective solutions or solutions more prone to failure.

Practice Round: Jamie's Story

Note: Let your students know that all of these scenarios are based on real accidents that were reported to the Department of Public Health in the State of Massachusetts.

1. Conduct a practice round. Project PowerPoint slide 2 and read the story aloud to the class. For this practice round, teams should not bother writing down solutions, but should just call out their answers. Confirm with the students which category on the pyramid their solution belongs to. Add any solutions the class misses.

Show PowerPoint slide 2. Read the story aloud.



Jamie is a 17-year-old dishwasher in a hospital kitchen. To clean cooking pans, she soaks them in a powerful chemical solution. She uses gloves to protect her hands and arms. One day, as Jamie was lifting three large pans out of the sink at once, they slipped out of her hands and back into the sink. The cleaning solution splashed all over the side of her face and got into her right eye. She was blinded in that eye for two weeks.

2. Ask the class:

"What solutions can you think of that might prevent this injury from happening again?"

Suggested answers:

Remove the Hazard (\$2000 per correct answer)

- Substitute a safer cleaning product.
- Use disposable pans.
- Use a dishwashing machine.

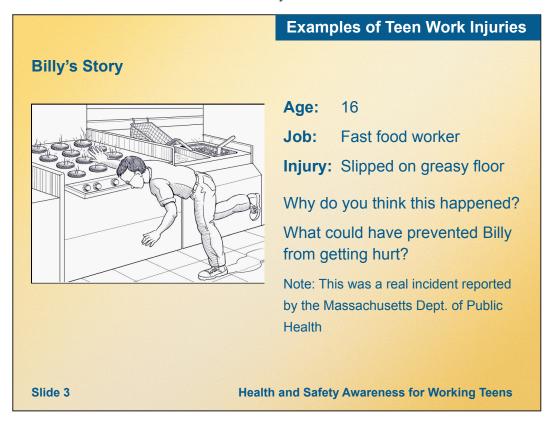
Work Policies (\$1000 per correct answer)

- Have workers clean one pan at a time.
- Give them training about how to protect themselves from chemicals.

Personal Protective Equipment (\$500 per correct answer)

- Goggles.
- 3. Begin the game. Play as many rounds as it takes for a team to reach \$25,000. When a team wins, award prizes.
- 4. At the end of each round, review the solutions teams have posted and total the points for valid answers. You can identify a team's solutions by the color of its post-it notes. Add any solutions the teams missed.

Round 1: Billy's Story Show PowerPoint slide 3. Read the story aloud.



Billy is a 16-year-old who works in a fast food restaurant. One day Billy slipped on the greasy floor. To stop his fall, he tried to grab a bar near the grill. He missed it and his hand touched the hot grill instead. He suffered second degree burns on the palm of his hand.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Give the teams one minute to write down their solutions and put them on the board. Then compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

- Design the grill so the bar is not so close to the grill.
- Cover the floor with a non-skid mat.
- Install non-skid flooring.
- Put a shield on the grill when not in use to prevent people from accidentally touching it.
- Put a cover on the french-fry basket so grease won't splatter out.

Work Policies (\$1000 per correct answer)

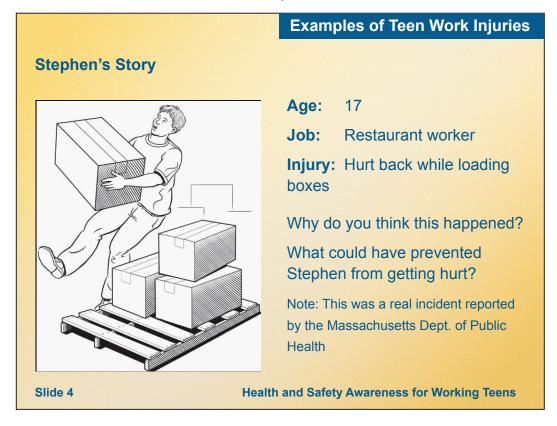
- Have workers immediately clean up spilled grease.
- Design the traffic flow so workers don't walk past the grill.

Personal Protective Equipment (\$500 per correct answer)

- Non-skid shoes.
- Gloves.

Round 2: Stephen's Story

Show PowerPoint slide 4. Read the story aloud.



Stephen is a 17-year-old who works in the back end of a restaurant. One day while unloading a heavy box from a delivery truck onto a pallet, he slipped and fell. He felt a sharp pain in his lower back. He was embarrassed, so he got up and tried to keep working. It kept bothering him, so he finally went to the doctor. He had to stay out of work for a week to recover. His back still hurts sometimes.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

- Use a mechanical lifting device.
- Pack boxes with less weight.
- Unload trucks in a sheltered area so workers aren't exposed to weather, wind, or wet surfaces.

Work Policies (\$1000 per correct answer)

- Assign two people to do the job.
- Train workers how to lift properly.
- Enforce a policy that teens never lift over 30 pounds at a time, as recommended by the National Institute for Occupational Safety and Health (NIOSH).

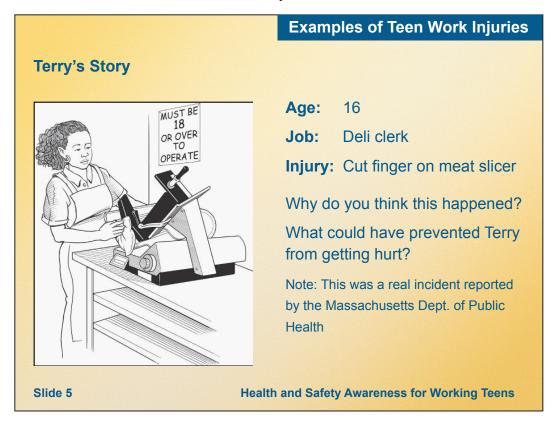
Personal Protective Equipment (\$500 per correct answer)

• Wear non-slip shoes.

(*Note:* A recent NIOSH study found that back belts do not help. For more information see <u>www.cdc.gov/niosh/belting.html</u>.)

Round 3: Terry's Story

Show PowerPoint slide 5. Read the story aloud.



Terry is a 16-year-old who works in the deli department at a grocery store. Her supervisor asked her to clean the meat slicer, although she had never done this before and had never been trained to do it. She thought the meat slicer was turned off before she began cleaning it. Just as she started to clean the blades, the machine started up. The blade cut a finger on Terry's left hand all the way to the bone.

Ask the teams:

"What solutions might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

- There should be a guard on the machine to protect fingers from the blade.
- There should be an automatic shut-off on the machine.

Work Policies (\$1000 per correct answer)

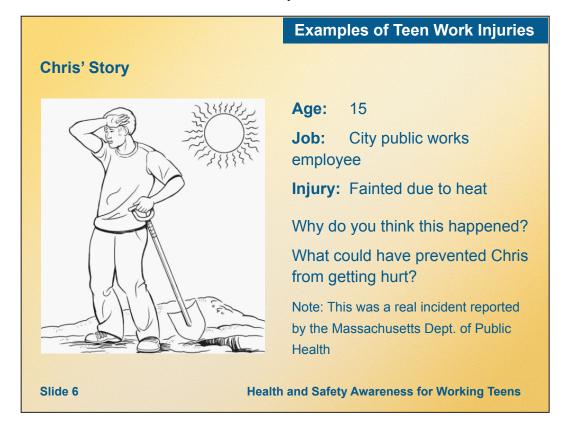
- There should be a rule that the machine must be unplugged before cleaning.
- No one under 18 should be using or cleaning this machine because it violates child labor laws.

Personal Protective Equipment (\$500 per correct answer)

• Cut-resistant gloves.

Round 4: Chris' Story

Show PowerPoint slide 6. Read the story aloud.



Chris works for a city public works department. One hot afternoon the temperature outside reached 92 degrees. While Chris was shoveling dirt in a vacant lot, he started to feel dizzy and disoriented, and he fainted.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below:

Remove the Hazard (\$2000 per correct answer)

• N/A

Work Policies (\$1000 per correct answer)

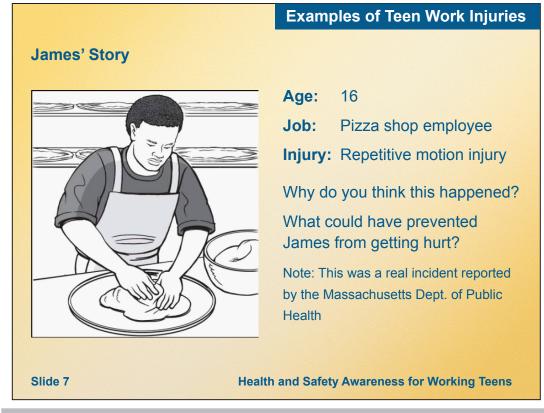
- Limit outdoor work on very hot days.
- Have a cool place to go for frequent breaks.
- Have plenty of water available.
- Provide training on the symptoms of heat stress and how to keep from getting overheated.
- Work in teams to watch one another for symptoms of overheating (such as disorientation and dizziness).

Personal Protective Equipment (\$500 per correct answer)

A hat to provide shade. A cooling vest.

Round 5: James' Story

Show PowerPoint slide 7. Read the story aloud.



James is a 16-year-old who works in a busy pizza shop. His job is to pat pizza dough into pans. He prepares several pans per minute. Lately he has noticed that his hands, shoulders, and back are hurting from the repetitive motion and standing for long periods of time.

Ask the teams:

"What solutions can you think of that might prevent this musculoskeletal strain?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

• Provide a chair or stool for sitting while doing this task.

Work Policies (\$1000 per correct answer)

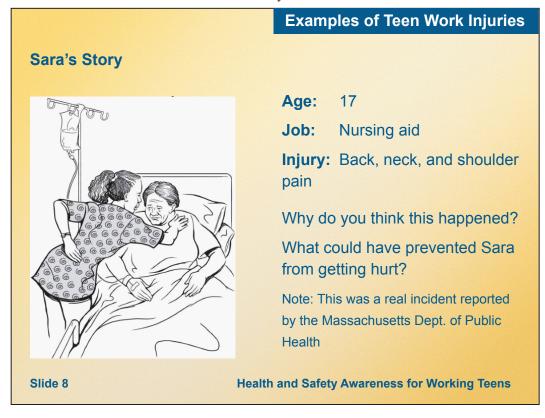
- Vary the job so no one has to make the same movements over and over.
- Provide regular breaks.

Personal Protective Equipment (\$500 per correct answer)

• None.

Round 6: Sara's Story

Show PowerPoint slide 8. Read the story aloud.



Sara works as a nursing aide at a local hospital. She is expected to clean bedpans and sometimes change sheets, which requires lifting patients. Lately she has been feeling twinges in her back when bending over or lifting. She knows she is supposed to get help when lifting a patient, but everyone in the unit is so busy that she is reluctant to ask. At home, as she is going to sleep, she often feels shooting pains in her back, neck, and shoulders. These pains seem to be getting worse every day.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

- Stop lifting alone.
- Lift patients only when other people are available to help, or use a mechanical lifting device.

Work Policies (\$1000 per correct answer)

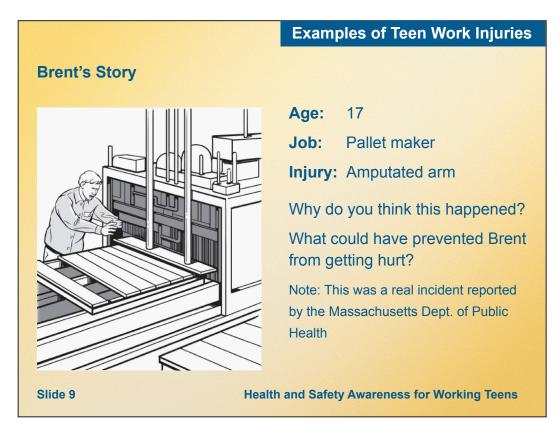
- Make sure workers who have already been injured are not required to lift.
- Create a policy that workers may lift patients only in teams or when using a lifting device.
- Train workers about safe lifting methods.

Personal Protective Equipment (\$500 per correct answer)

• None.

Round 7: Brent's Story

Show PowerPoint slide 9. Read the story aloud.



Seventeen-year-old Brent worked after school in his father's palletmaking business. One day Brent was working on a machine that helps take old pallets apart by cutting through wood and nails. The machine sorts out the old nails into a bin and then cuts the remaining wood into small pieces that can be ground into shavings. Brent's sleeve got caught in the mechanism of the saw. Before he realized what was happening, his arm was cut off. He was rushed to the hospital, but his arm could not be saved.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

• There should be a guard on the machine to protect body parts from the moving parts of the machine.

- There should be an emergency shut off button in reach of the operator.
- The machine might be designed so the operator has to keep both hands on the controls.
- This would keep hands away from the moving parts.

Work Policies (\$1000 per correct answer)

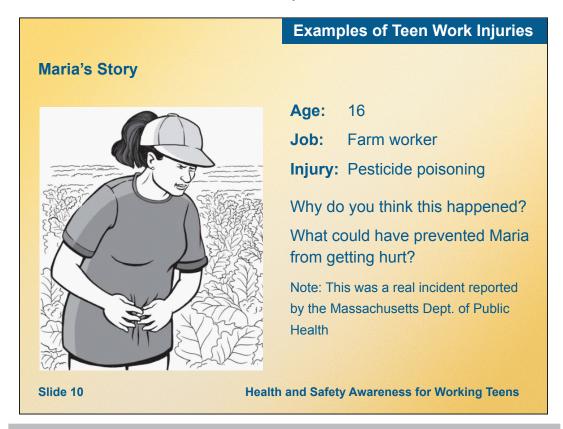
• There should be a rule that no loose clothing may be worn around the machinery.

Personal Protective Equipment (\$500 per correct answer)

• None.

Round 8: Maria's Story

Show PowerPoint slide 10. Read the story aloud.



Maria works tying up cauliflower leaves on a 16-acre farm. One day she was sent into the field too soon after it had been sprayed. No one told her that the moisture on the plants was a highly toxic pesticide. Soon after she began to work, Maria's arms and legs started shaking. When she stood up, she got dizzy and stumbled. She was taken by other farm workers to a nearby clinic. Three weeks later she continues to have headaches, cramps, and trouble breathing.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard (\$2000 per correct answer)

- Use pesticide-free farming methods.
- Or use a less toxic pesticide.

Work Policies (\$1000 per correct answer)

• Wait the required number of hours or days after the crops are sprayed to re-enter the field. This should be on the label.

Personal Protective Equipment (\$500 per correct answer)

- Wear impermeable gloves and work clothes.
- If needed, wear a respirator.

Tally the dollar amounts. Determine the winners and hand out prizes.

Activity D. Making the Job Safer Post-Test

- 1. Distribute copies of handout A *Making the Job Safer Post-Test* to students at the end of this unit.
- 2. Handout C *Pre- and Post-Test Teacher Answer Key* is provided to help you evaluate your students work on the test. The answer key provides possible examples of correct answers.

Making Restaurant Jobs Safer Pre-Test

Name	Date	Period
	Date	Period

There are three primary ways to control or reduce a workplace hazard so that the workers are protected. Some of these methods are more effective than others.

Directions: For each example below, mark an X in the box to show which level of protection it would provide the worker.

Most Protective	Moderately Protective	Least Protective	
			Having the worker wear personal protective equipment to protect them from the hazard.
			Completely removing or isolating the worker away from the hazard.
			Establishing a workplace policy and procedure that minimizes the person from being exposed to the hazard.
			Substituting a hazardous cleaning prod- uct with a new cleaning product that is less toxic.
			Setting up and enforcing a workplace policy that requires all employees to clean up spills immediately after they happen.
			Wearing gloves and safety glasses when working with a cleaning product that irritates the workers skin.

Handout A

Handout B

Making Restaurant Jobs Safer Post-Test

Name	— Date	Period

There are three primary ways to control or reduce a workplace hazard so that the workers are protected. Some of these methods are more effective than others.

Directions: For each example below, mark an X in the box to show which level of protection it would provide the worker.

Most Protective	Moderately Protective	Least Protective	
			Having the worker wear personal protective equipment to protect them from the hazard.
			Completely removing or isolating the worker away from the hazard.
			Establishing a workplace policy and procedure that minimizes the person from being exposed to the hazard.
			Substituting a hazardous cleaning prod- uct with a new cleaning product that is less toxic.
			Setting up and enforcing a workplace policy that requires all employees to clean up spills immediately after they happen.
			Wearing gloves and safety glasses when working with a cleaning product that irritates the workers skin.

Making Restaurant Jobs Safer: Teacher Answer Key

Name	Date	Period

There are three primary ways to control or reduce a workplace hazard so that the workers are protected. Some of these methods are more effective than others.

Directions: For each example below, mark an X in the box to show which level of protection it would provide the worker.

Most Protective	Moderately Protective	Least Protective	
		\checkmark	Having the worker wear personal protective equipment to protect them from the hazard.
\checkmark			Completely removing or isolating the worker away from the hazard.
	\checkmark		Establishing a workplace policy and procedure that minimizes the person from being exposed to the hazard.
			Substituting a hazardous cleaning prod- uct with a new cleaning product that is less toxic.
	V		Setting up and enforcing a workplace policy that requires all employees to clean up spills immediately after they happen.
		\checkmark	Wearing gloves and safety glasses when working with a cleaning product that irritates the workers skin.

Handout C