

LESSON
4

Applying Prevention Strategies in the Workplace - Part I



Description:

Students create workplace safety plans for simulated work environments. The plans include hazard maps and safety action plans.

Learner Outcomes:

Students will be able to do the following:

1. Identify hazards within a workplace environment.
2. Select appropriate prevention strategies to address workplace hazards.
3. Create a plan by prioritizing the order in which these prevention strategies will be implemented.

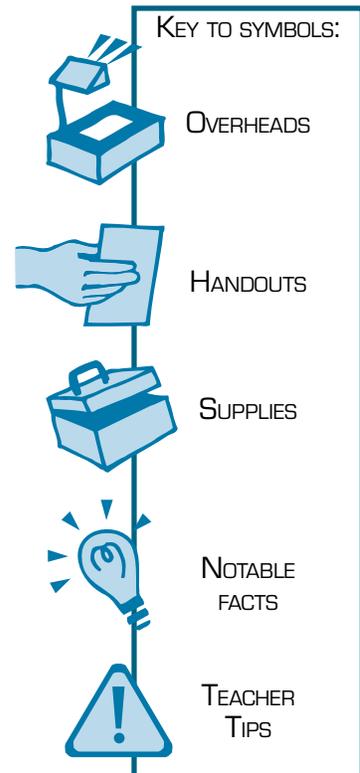
4. Demonstrate a positive problem-solving attitude toward workplace hazards.
5. Perceive that they can personally take steps to make a workplace safer.

Key Concepts:

1. Each workplace has potential hazards (physical, chemical, biological) that should be identified.
2. Each person can take proactive steps to prevent injuries or illnesses in his or her workplace.
3. Once prevention strategies are identified, they can be used to make the workplace safer.

Fact:

The estimated cost of work-related injuries in the United States in 2007 was \$192 billion. Work-related illnesses cost an additional \$58 billion.¹



During this class, you will be mapping the hazards in your workplaces, developing prevention plans for those hazards, and preparing to present your plans to your employers. Your fellow students will act as employers, during our next class session.

3. Divide students into groups of four. You may want to divide the students into groups based on their interest in or knowledge of the specific work environments. Give each student a copy of the “Safety Team Assignment” sheet. Students may read along as you give the instructions for this project, or the sheet may be distributed to the students once they are in their small groups.
4. Give each person on a team a workplace scenario description and map for one business. Also give each team the overhead map for their business or workplace and an overhead marker. Have each person silently read the description of their workplace.
5. When the students are done, say:
Team members are all employees of the same company and are developing the plan at work.



Mapping The Hazards (20 minutes)

1. Explain:
The first step is to identify the potential hazards in this workplace. The map you have gives you a basic layout of the work area. From this map, identify the hazards there. Write these hazards on your overhead map using the overhead marker.

Have groups assign one person to write these hazards on the overhead map. The rest of the group members can study their individual paper copy of the map to brainstorm ideas.

The person writing on the overhead should write clearly. Groups will be presenting this version of their map to the rest of the class, so it should be easy to read.

2. Say:
Label the different types of hazards using the following code:
 - **P** to show physical hazards.
 - **C** to show chemical hazards.
 - **B** to show biological hazards.

You may want to write these codes on the chalkboard or easel.

3. Explain:
Remember to include hazards that could cause injuries or



In most cases, the best preventions require a change in the workplace, not a change in worker behavior.



illnesses right away and those that could cause injuries or illnesses later in life.

If you are not sure what the hazards are, make your best guess based on what you know about the types of hazards and this type of workplace. Use your fact sheets from past classes as a guide. Carefully read the description of your workplace and look at the workplace map.

The quality of your safety action plans will be determined by how thoroughly you analyze your workplace. You also will be presenting your plans to the rest of the class next session, so the map should clearly identify as many hazards as possible.

4. Allow teams about 15 minutes to identify the hazards in their worksite. Make sure they do not rush through this part of the project, even though they may have created hazard maps before.

Developing the Prevention Plan (20 minutes)

1. Explain:
Now that you have identified the hazards in your workplace, you need to develop plans to prevent injuries or illnesses that could be caused by these hazards. We will use a “Workplace Safety Action Plan” to complete this step.
2. Show Overhead 4.1 as an example of a completed “Workplace Safety Action Plan.” Read through the completed form using the following narrative, so students get an idea of how to fill it out:

First write the name of your company or organization at the top of the sheet. Then fill in the left-hand column with the hazards you identified. You should have only one hazard in each row. You will be filling in more than one sheet.

Then, using the ABC formula (Administration, Building Barriers, Communication), identify possible prevention steps for each hazard. Try to identify two or three preventative steps for each ABC category. Write them in the space provided.

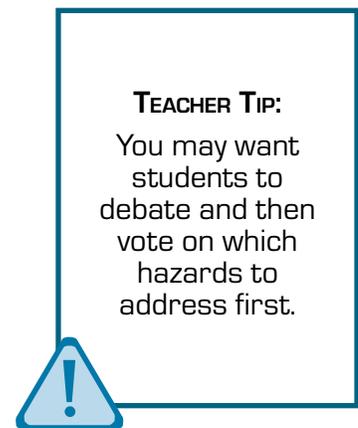
3. Give each team copies of the “Workplace Safety Action Plan” form. Have students take out their fact sheets from previous lessons and use these fact sheets as reference material for identifying prevention strategies.



4. Say:
Fill out “Workplace Safety Action Plan” forms for at least four of the hazards you identified on your map (one hazard per group member).

Possible hazards and corresponding prevention strategies have been included with each scenario. These checklists are only for the teacher’s use in grading student projects.

5. When groups are done listing prevention strategies, ask:
How do you decide which prevention strategies to use? In most cases, the best preventions are those that require a change in the workplace, not a change in worker behavior. In most cases, changing the workplace will involve building barriers of some type.



6. Explain:
After you have filled in forms for a number of hazards, decide as a group which two hazards you will address first. Which hazards seem the most serious? Write a paragraph describing the two hazards and why you chose to address them first. Also describe which prevention strategy you will use for each hazard and why. Thoroughly explain your choices.

7. Explain:
You have been requested by your employers to produce top notch safety plans and present the plans to them during our next class session. Your safety action plans and presentations will be graded on the following criteria:

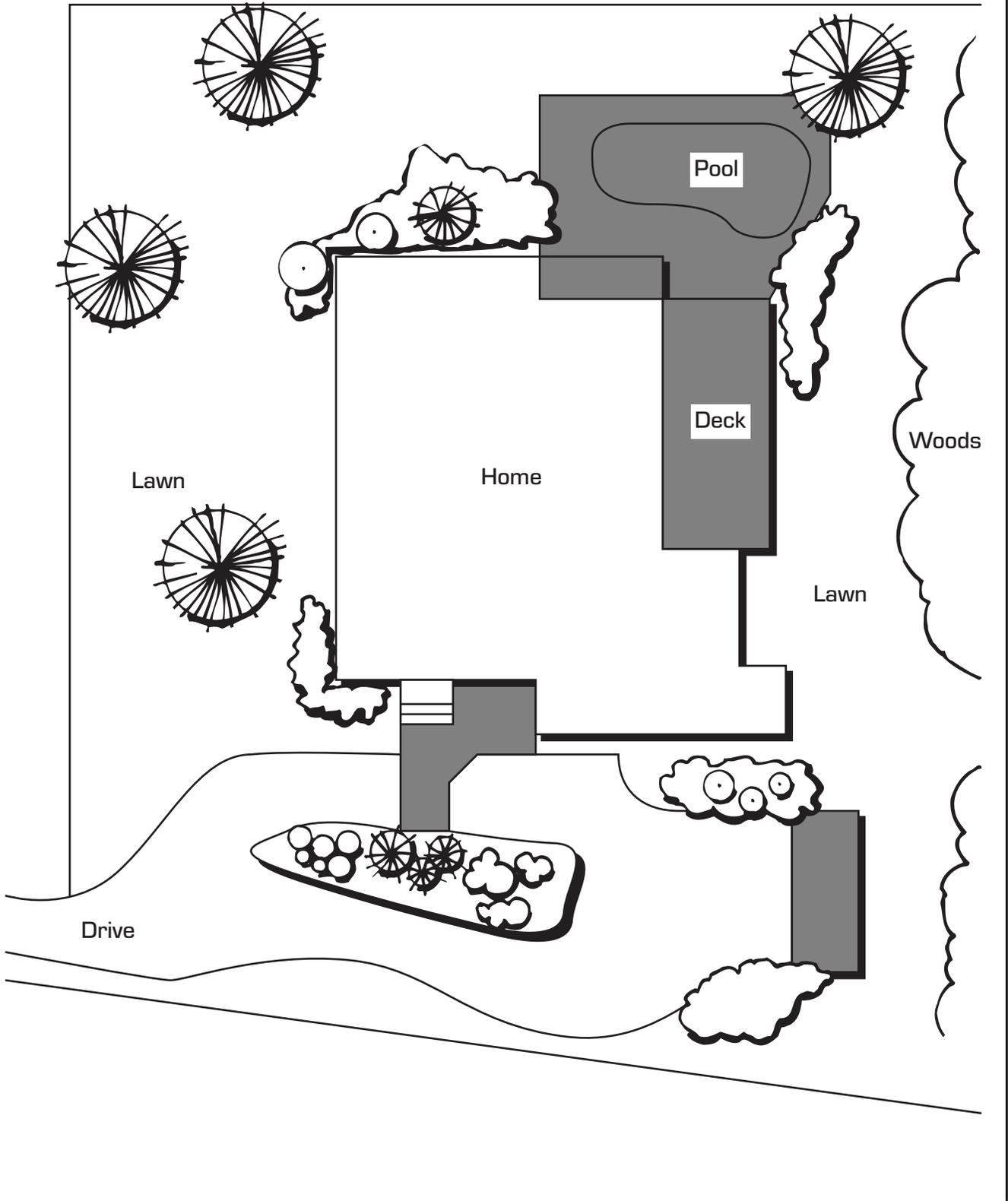
- a. You demonstrate that you followed a clear decision-making process.
- b. Your plan and presentation are well-organized.
- c. Your plan and presentation are thorough.
- d. You demonstrate creativity by, for example, coming up with unique solutions.

Workplace Safety Action Plan (Example)

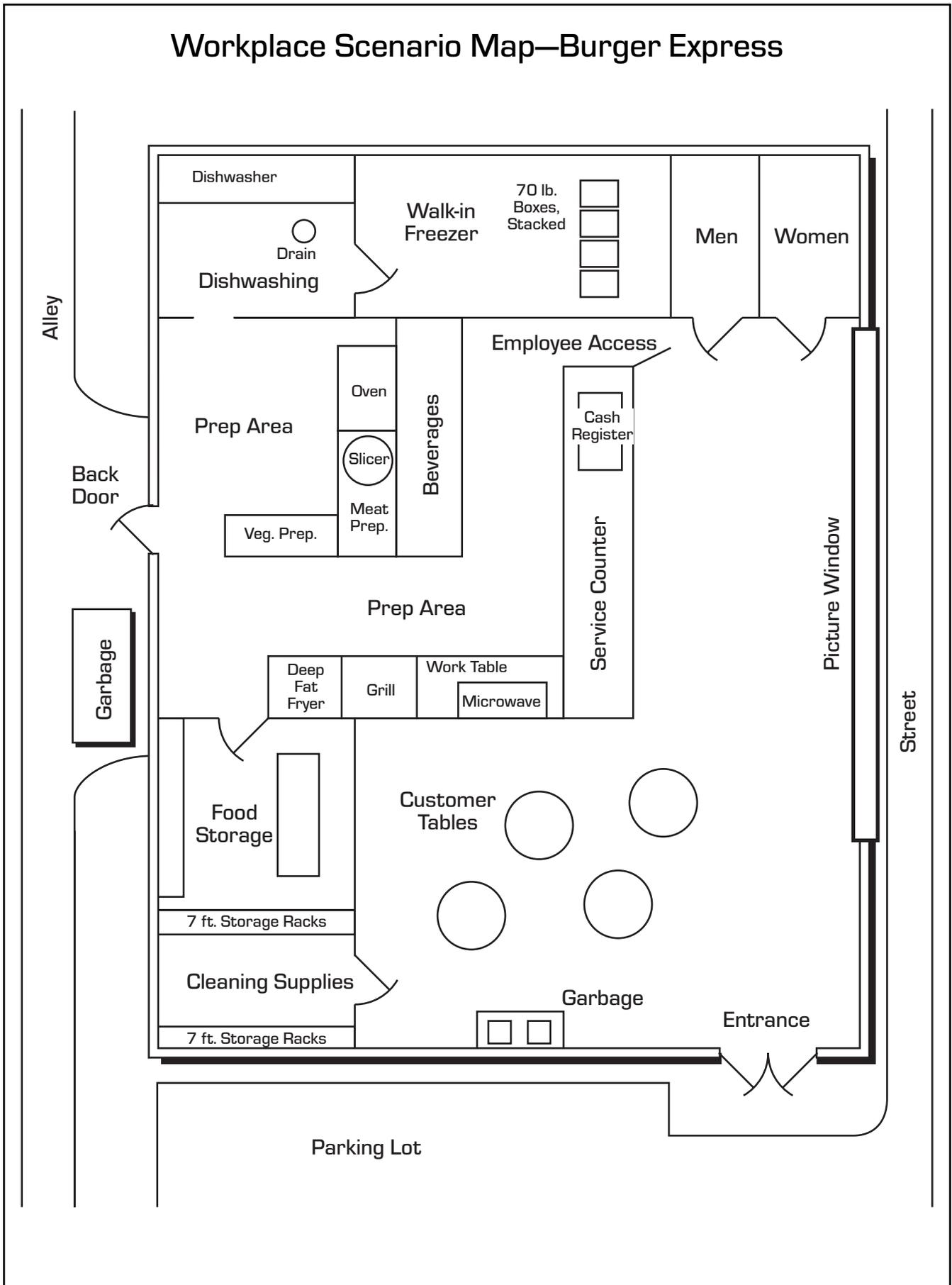
Company/Organization Name: _____

Hazard	Administration	Building Barriers	Communication
Cleaning Products	<ol style="list-style-type: none"> 1. Require workers to wear rubber gloves when cleaning. 	<ol style="list-style-type: none"> 1. Use the least toxic cleaning products available. 2. Use protective equipment (e.g., gloves, mask). 3. Store cleaning products in locked cabinets away from workers. 	<ol style="list-style-type: none"> 1. Train employees to use cleaning products correctly. 2. Give copies of Material Safety Data Sheets to workers.
Walk-in Freezer (Confined Space, Cold)	<ol style="list-style-type: none"> 1. Require workers to inform another employee before entering the freezer area. 	<ol style="list-style-type: none"> 1. Install a two-way lock to prevent employees from becoming trapped inside the freezer. 2. Install an emergency call button in the freezer that rings throughout the store. 3. Have winter coats, gloves, and hats available outside of the freezer for workers to wear while working in the freezer area. 	<ol style="list-style-type: none"> 1. Provide safety training to workers regarding dangers of freezer area. 2. Post visible safety reminder signs on the outside of the freezer.
Meat slicer	<ol style="list-style-type: none"> 1. Require training in the use of the meat slicer prior to working in the deli. 2. Require use of a guard whenever meat slicer is in operation. 	<ol style="list-style-type: none"> 1. Install machine guards or shields on the meat slicer. 	<ol style="list-style-type: none"> 1. Train employees to use the slicer and knives properly. 2. Provide ongoing supervision to spot-check safety techniques.
Heavy Loads	<ol style="list-style-type: none"> 1. Establish a weight limit that can be lifted by workers. 2. Rotate workers between stocking and other jobs that don't require lifting. 	<ol style="list-style-type: none"> 1. Use carts and lifting aids for heavy boxes. 2. Lift boxes with the help of a coworker. 	<ol style="list-style-type: none"> 1. Train employees in safe lifting techniques.

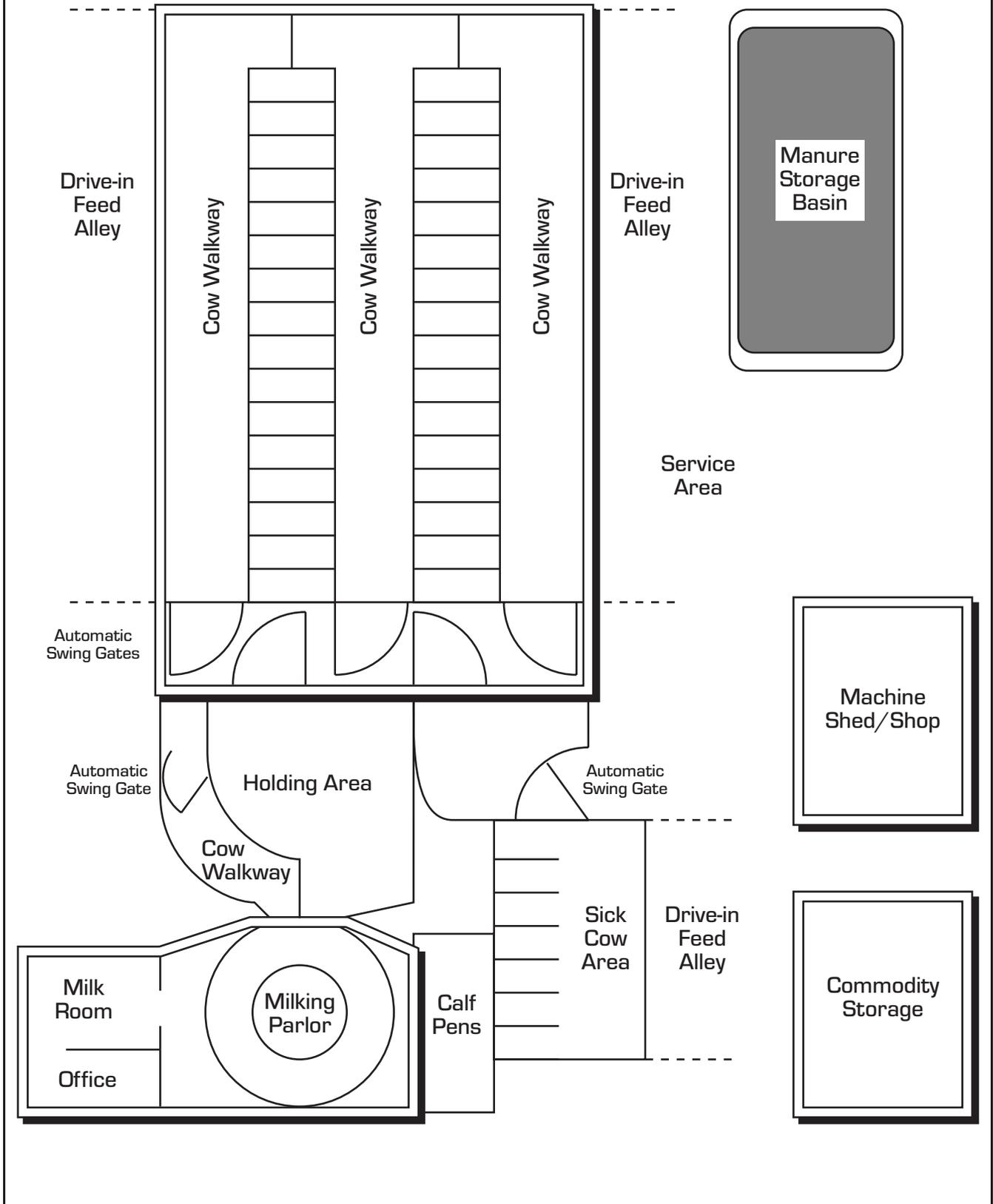
Workplace Scenario Map—Green Thumb Landscaping



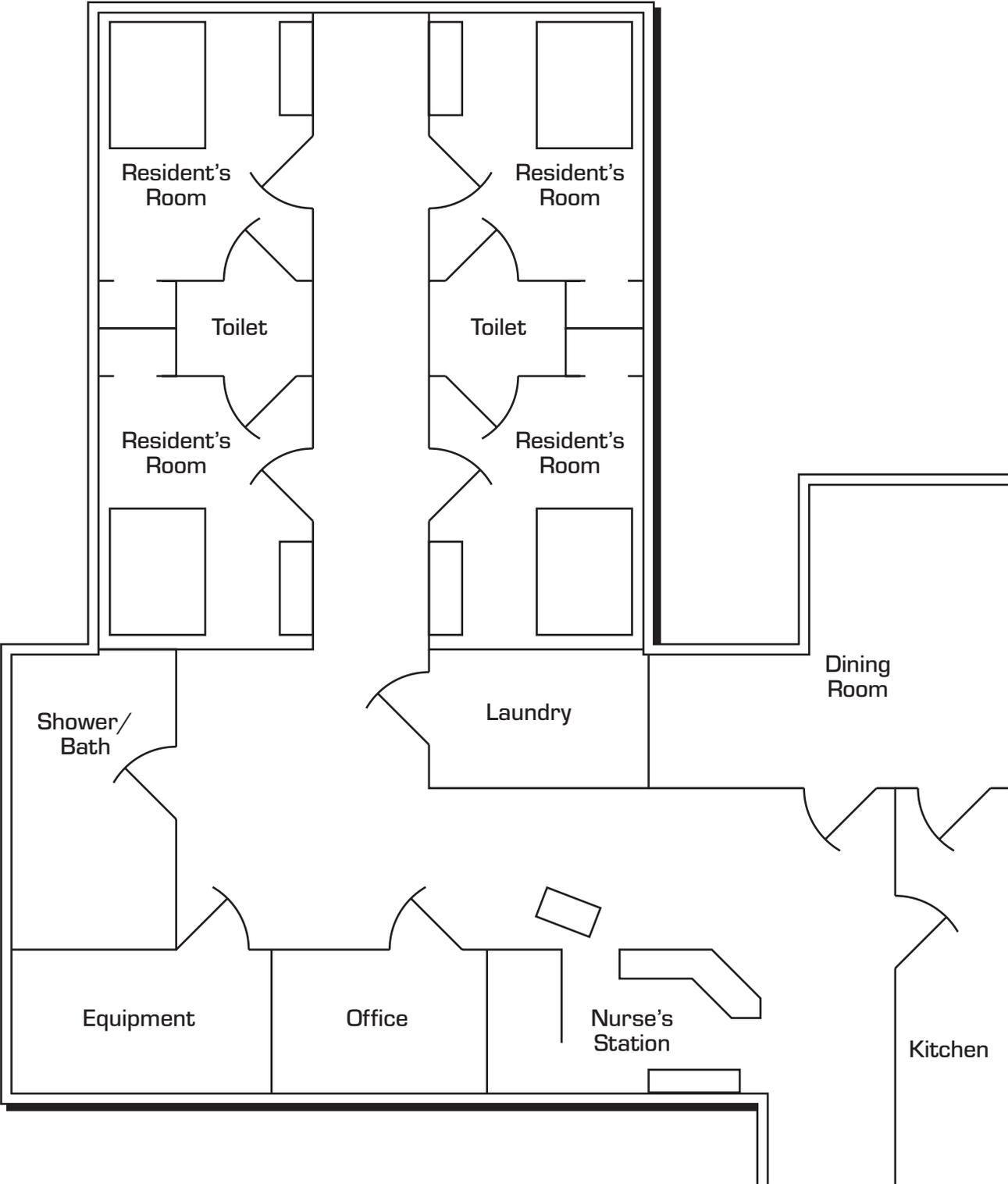
Workplace Scenario Map—Burger Express



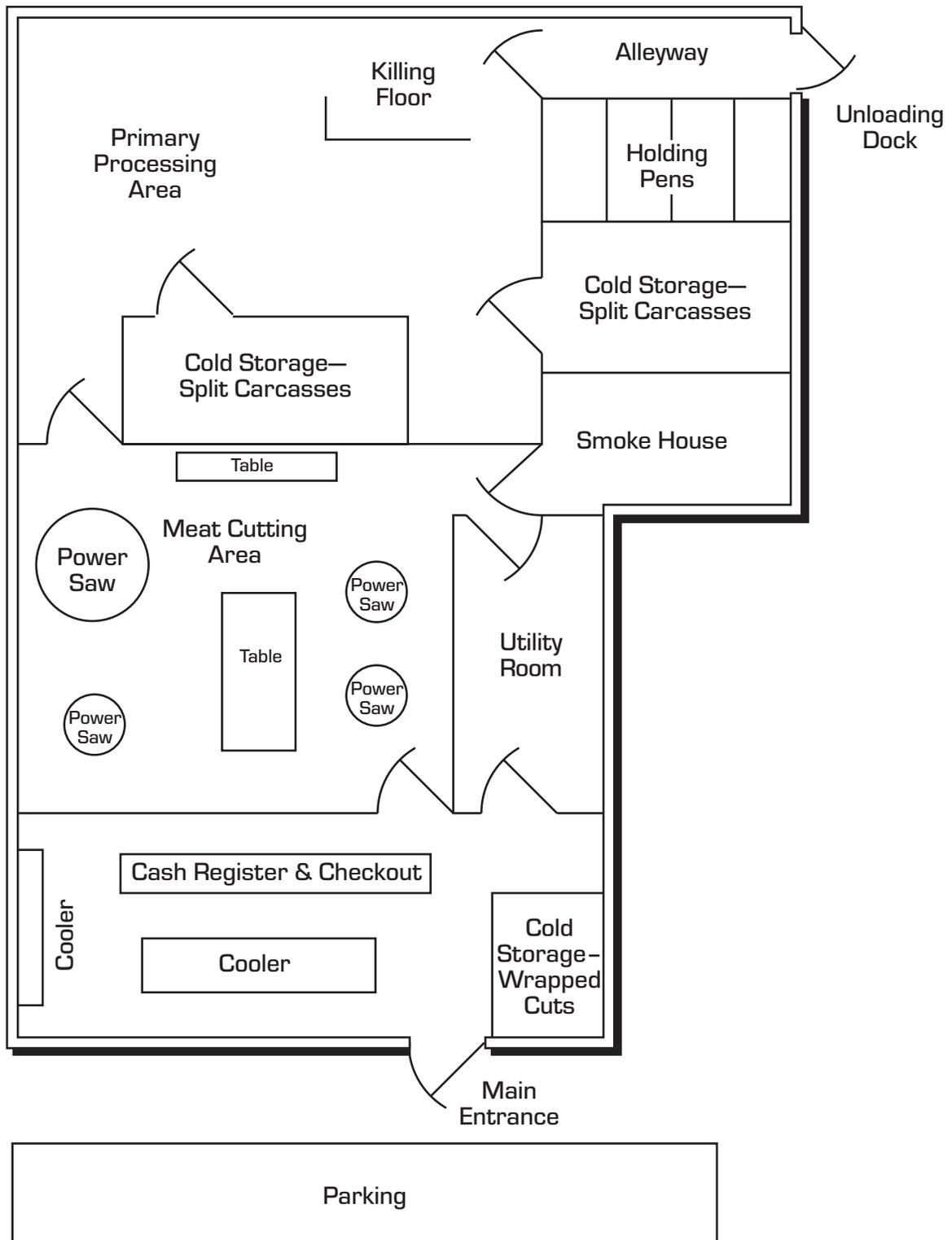
Workplace Scenario Map—DairyLand Dairy Farms



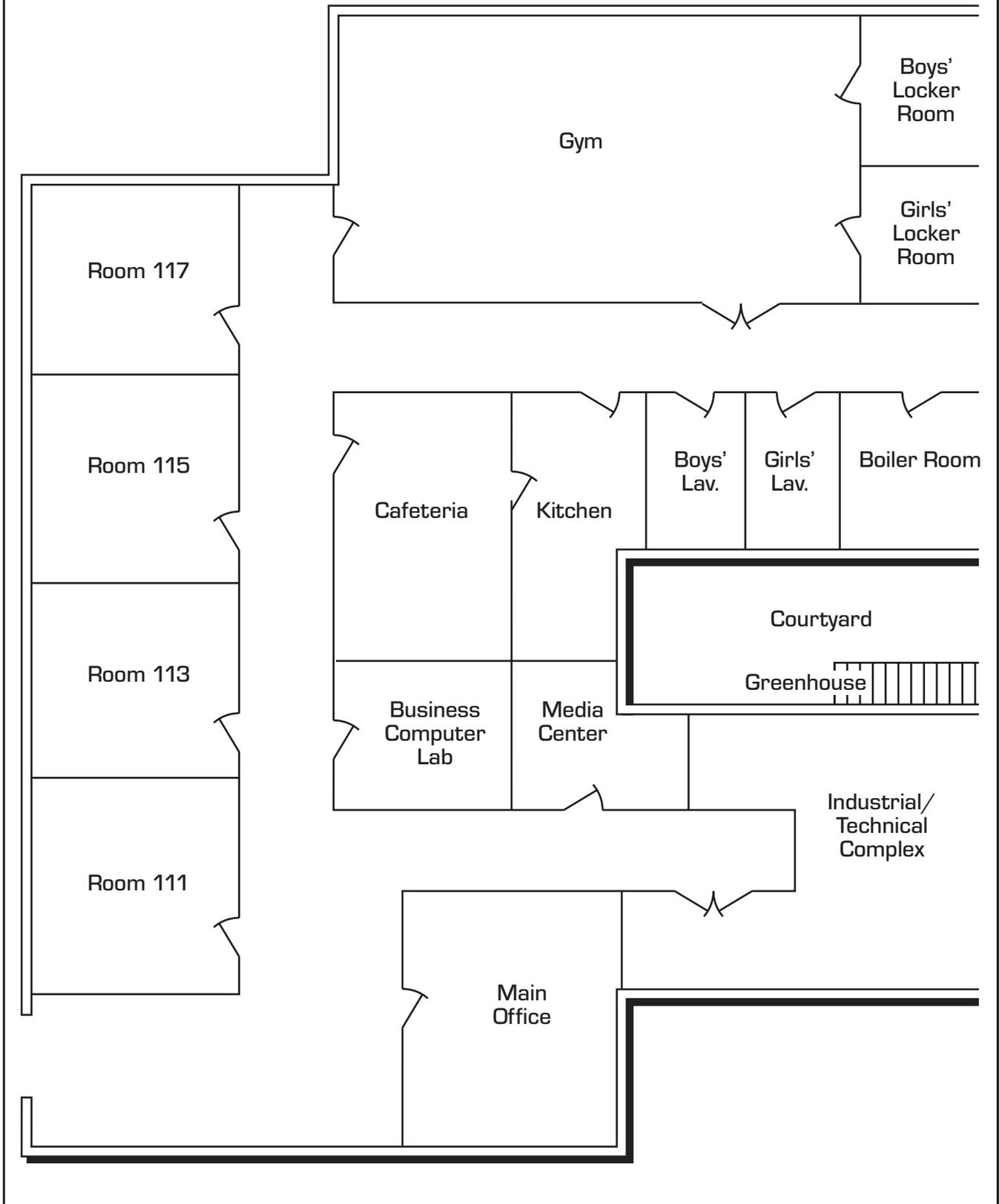
Workplace Scenario Map—Pleasant Meadow Nursing Home



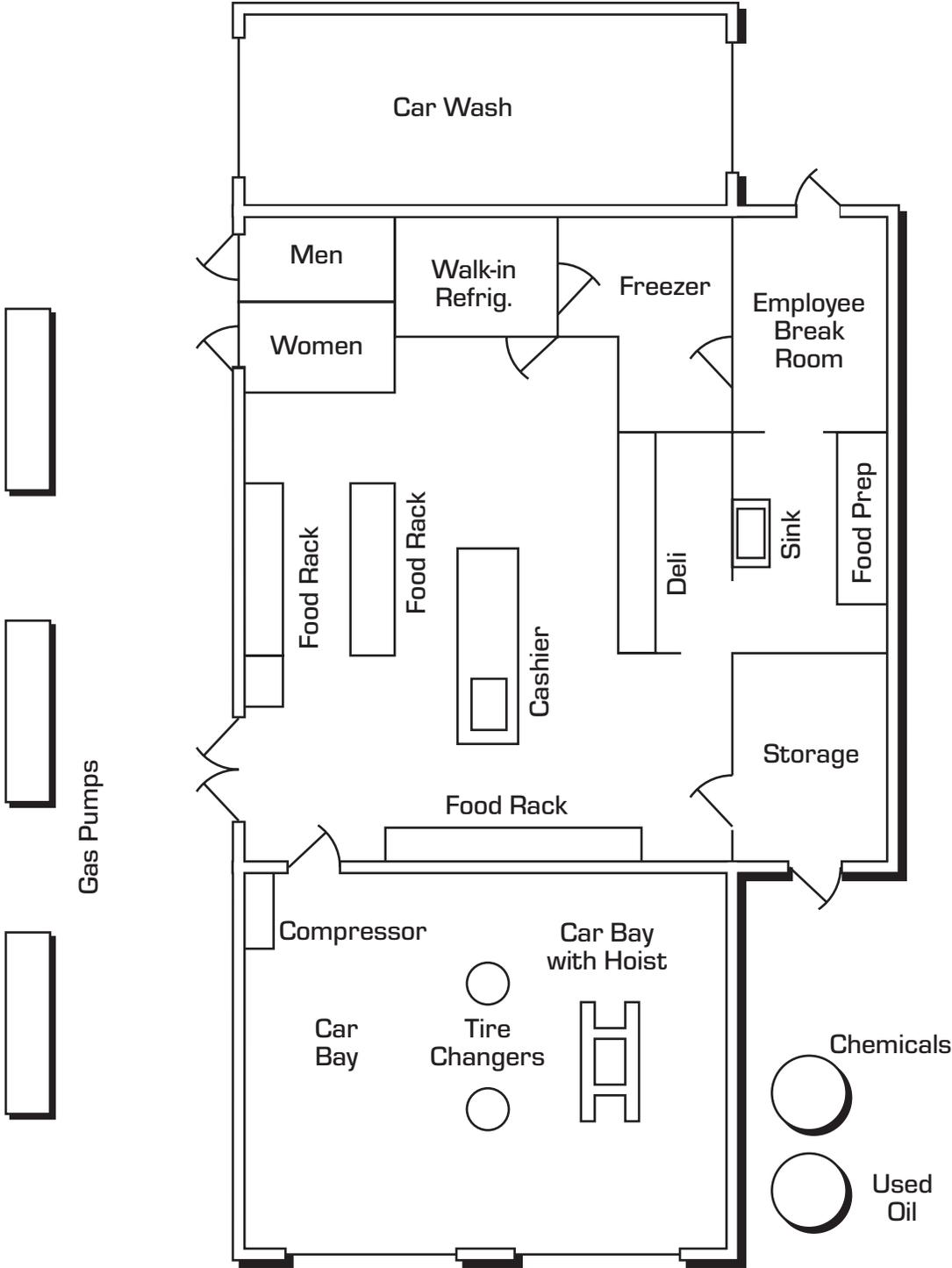
Workplace Scenario Map—Prairie View Meat Processors



Workplace Scenario Map—Washington High School



Workplace Scenario Map—Quick-Stop Convenience Store



Teacher's Key: Hazard Checklists for Workplace Scenarios

FOR TEACHER USE ONLY

Prevention examples are listed after each possible hazard.

Green Thumb Landscaping

PHYSICAL HAZARDS

Working around heavy machinery.

Install warning device that beeps when equipment is backing up.

Train staff to use equipment properly.

Require employees to wear bright-colored clothing.

Heavy lifting.

Provide machinery to lift bags of sand.

Buy smaller, lighter bags of sand.

Train staff in proper lifting techniques.

Underground electrical wiring.

Set up procedures that must be followed to authorize any digging.

Power hand tools.

Adequately guard tools.

Train staff on potential danger of each tool.

Repetitive motions (raking, shoveling).

Rotate jobs.

Train staff on the safe way to shovel.

Limit the number of hours working at these types of jobs.

CHEMICAL HAZARDS

Fertilizers, pesticides, dust.

Store chemicals in safe locations.

Give MSDS to employees.

Provide masks when workers are in dusty environments.

Train staff to use, store, and dispose of chemicals properly.

BIOLOGICAL HAZARDS

Contact with blood.

Provide gloves in first aid kit.

Train staff about ways to avoid infection.

Burger Express

PHYSICAL HAZARDS

Falling objects on high storage racks.

Replace racks with lower, wider racks.

Provide appropriate safety ladders to reach top shelves.

Store light objects (e.g., toilet paper, and paper towels) on top shelves.

Heavy boxes.

Use mechanical aids for lifting boxes.

Train employees on proper lifting techniques.

Walk in freezer.

Install latch on freezer door that can be opened from the inside.

Slippery floors near dishwasher, beverage machine, and deep fryer.

Use non-slip flooring.

Require mopping and drying of floor every hour.

Meat slicer.

Place guard on slicer.

Instruct all employees on correct use of slicer.

Require use of shield whenever slicer is in use.

Knives used for cutting.

Use food processor instead of knives.

Teach correct cutting techniques

Hot oven.

Provide rack puller.

Provide mitts for use with hot items.

Inspect mitts regularly for damage.

Hot oil.

Set a rule requiring the temperature of the oil to be below a certain temperature before it may be thrown away.

Create a spigot with a long handle that allows the oil to drain into an enclosed, spill-proof disposal unit.

Grill.

Use grill surface that changes color when hot.

(Burger Express continued next page)

Teacher's Key: Hazard Checklists for Workplace Scenarios (continued)
FOR TEACHER USE ONLY

(Burger Express, continued)

Picture window - late night closings.

Replace clear glass with glass that allows light in but cannot be seen through.

Close earlier.

Require at least two employees to close the store.

Unlit parking lots and back alleys.

Put lights in the parking lots.

Require at least two people to close and walk out together.

CHEMICAL HAZARDS

Cleaning supplies for bathrooms, cooking surfaces, and floors.

Provide gloves.

Require glove use.

Provide Material Safety Data Sheets and train staff how to use MSDS.

BIOLOGIC HAZARDS

Bathrooms and raw meat.

Require hand washing.

Provide educational information on biologic hazards.

GENERAL

Train workers in all tasks they will ever be expected to do. Require refresher training.

DairyLand Dairy Farms

PHYSICAL HAZARDS

Movement of large animals.

Install gates to limit animal movement.

Make sure staff are trained in how to handle large animals.

Low floor in parlor. People constantly reaching could cause back injuries.

Have an adjustable platform for workers.

Cement floors are very slippery after being washed.

Install non-slip flooring.

Slips and falls when scraping down the barns.

Provide boots with adequate traction.

(DairyLand, continued)

Moving parts in the auger.

Provide guards.

Require all guards to be in place prior to operation of the auger.

Injury when treating sick animals.

Use restraining equipment.

Train staff on restraining method.

Provide biologic hazard containers for disposal of used needles.

CHEMICAL HAZARDS

Spills from chemical barrels.

Put drip guards on chemical containers.

Contact with harmful chemicals.

Use proper protective equipment.

Use less toxic chemicals.

Train employees to use caution and read labels when using chemicals.

Install a device to remove a chemical without placing a hand into the chemical barrel.

BIOLOGICAL HAZARDS

Injury from needles when giving animals treatments.

Provide needles that don't require recapping.

Train staff on appropriate procedures.

Come in contact with infectious diseases.

Provide protective equipment.

Require proper disposal methods.

Train staff on appropriate procedures.

Pleasant Meadow

Nursing Home

PHYSICAL HAZARDS

Falls on slippery floors.

Install non-slip flooring.

Set up warning signs in slippery areas.

Heavy lifting.

Repair broken Hoyer lift.

Train staff in proper lifting techniques.

(Pleasant Meadow continued next page)

Teacher's Key: Hazard Checklists for Workplace Scenarios (continued) FOR TEACHER USE ONLY

(Pleasant Meadow, continued)

Physical and verbal abuse; stress.

Limit careloads.
Hire more staff.
Set up protocol to alert supervisors to abusive patients.
Train staff to handle behavioral problems.
Assign senior staff to work with the most difficult cases.

CHEMICAL HAZARDS

Cleaning chemicals.

Purchase nontoxic cleaners.
Train staff to use, store, and dispose of chemicals properly.

Cleaners for patient care.

Provide rubber gloves.
Train staff on proper use.

BIOLOGICAL HAZARDS

Contact with blood, communicable diseases, and bacteria.

Teach staff how to clean patients properly.
Set up procedures for disposal of needles and syringes.
Provide disposal bins for soiled items.
Post signs for hand washing.
Require immunizations for Hepatitis B.
Require yearly tuberculosis screening.
Train staff about infectious diseases.

Prairie View Meat Processors

PHYSICAL HAZARDS

Noise concerns.

Provide hearing protection devices.
Insulate walls.

Slippery floors.

Install non-slip flooring.
Require custodians to clean in these areas at regular intervals.
Slippery floor surfaces.
Install non-slip flooring.

Smokehouse/curing of meat.

Provide proper breathing apparatus.

(Prairie View, continued)

Freezer/refrigerators.

Install latch on freezer door that can be opened from the inside.
Provide proper clothing.
Provide time out of cold areas on a regular basis.

Meat-cutting equipment.

Insure all guards are used and maintained.
Give proper instruction.
Use steel-mesh gloves to prevent cuts.
Rotate jobs to prevent repetitive motion injuries.

Live animal control and movement.

Design the facility with proper stalls and gates to insure safety.
Give safety instructions.

Sharp objects.

Provide steel-mesh gloves.
Train in proper cleaning precautions.
Set up procedures for safely storing objects.

BIOLOGICAL HAZARDS

Bloodborne pathogens contracted through handling of meat.

Use gloves in all meat handling.

GENERAL HAZARDS

Language barriers.

Post safety instructions in English and other languages as needed.
Color code machines and areas with tape or paint to indicate hazards.

Washington High School

PHYSICAL HAZARDS

Boxes on high shelves.

Store heavy items down low.
Train people in proper lifting.

Walk-in freezer.

Provide a door handle on the inside.
Provide protective clothing.

(Washington High School continued next page)

Teacher's Key: Hazard Checklists for Workplace Scenarios (continued)
FOR TEACHER USE ONLY

(Washington High School, continued)

Electrical shock.

Place guards on equipment.
Place electrical warning signs on equipment.

Hot boiler.

Prevent contact by setting up barriers.
Keep door to boiler room locked.
Clean up asbestos (asbestos abatement).

CHEMICAL HAZARDS

Chemicals and cleaning products.

Set up storage and disposal procedures.
Provide protective equipment.
Train staff in proper use.

BIOLOGICAL HAZARDS

Contact with blood.

Provide training in infectious diseases.
Provide protective equipment.
Set up proper disposal procedures.

Live animals.

Keep animals in cages so custodians do not come in contact with animals.

Quick Stop Convenience Store

PHYSICAL HAZARDS

Noise from air compressors and other auto repair equipment.

Wear hearing protection.

Car bays and hoists.

Train staff in their proper use.

Boxes on high shelves in storage areas.

Store heavier items on middle shelves.
Train staff in proper lifting techniques.

Walk-in freezer/refrigerator.

Install latch on freezer door that can be opened from the inside.

Car wash.

Train staff in its proper use.

Tire changer.

Train staff in its proper use.

(Quick Stop, continued)

CHEMICAL HAZARDS

Chemicals - auto repair, car wash, cleaning supplies.

Purchase nontoxic chemicals.
Set up rules about labeling and storage of chemicals.
Train staff in their proper use.
Provide gloves, masks, and respirators appropriate for the use of chemicals.

Batteries.

Train staff in how to remove and dispose of batteries properly.
Provide eye protection and gloves for employees working with batteries.

BIOLOGICAL HAZARDS

Food preparation and sink.

Provide gloves.
Require staff to wear gloves and wash their hands.

Cleaning restrooms.

Require staff to wear gloves and wash their hands.

GENERAL HAZARDS

Cash register - robbery.

Install video equipment.
Require at least two employees to be in the store at the same time.
Have a cash box with no key in the store.