

FOOD SCIENCE & HYGIENE

Chapter 6....

Cleaning and Disinfection in the Kitchen

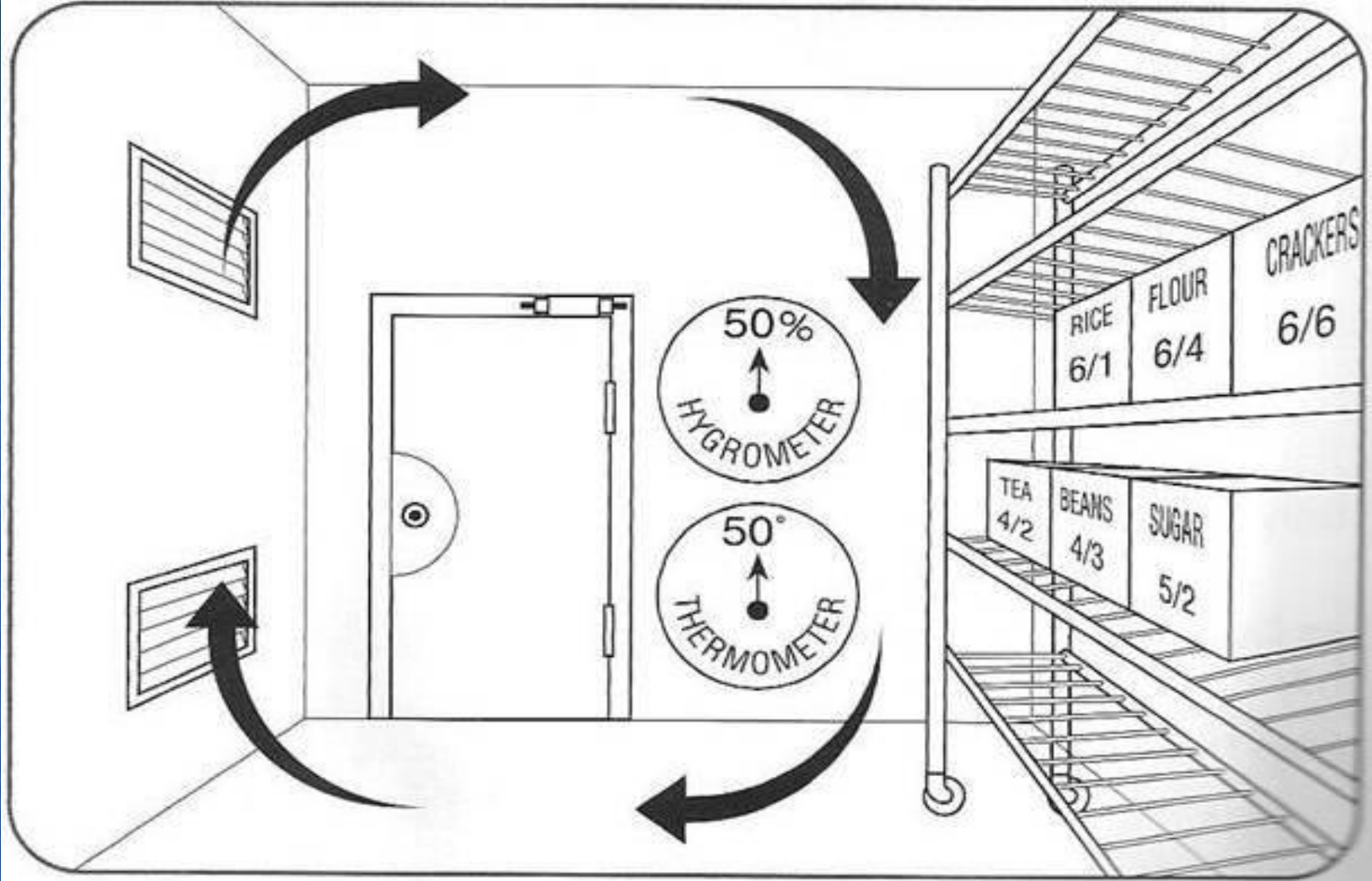


Facility design considerations

■ Dry storage

- Shelves, table surfaces & bins should be made of **corrosion resistant metal or food-grade plastic**
- The area should be free of **exposed steam pipes or heating ducts**
- The area should be free of **exposed water or sanitation pipes**
- Outside windows & doors **must have screens** and all cracks in walls & floors **must be filled**





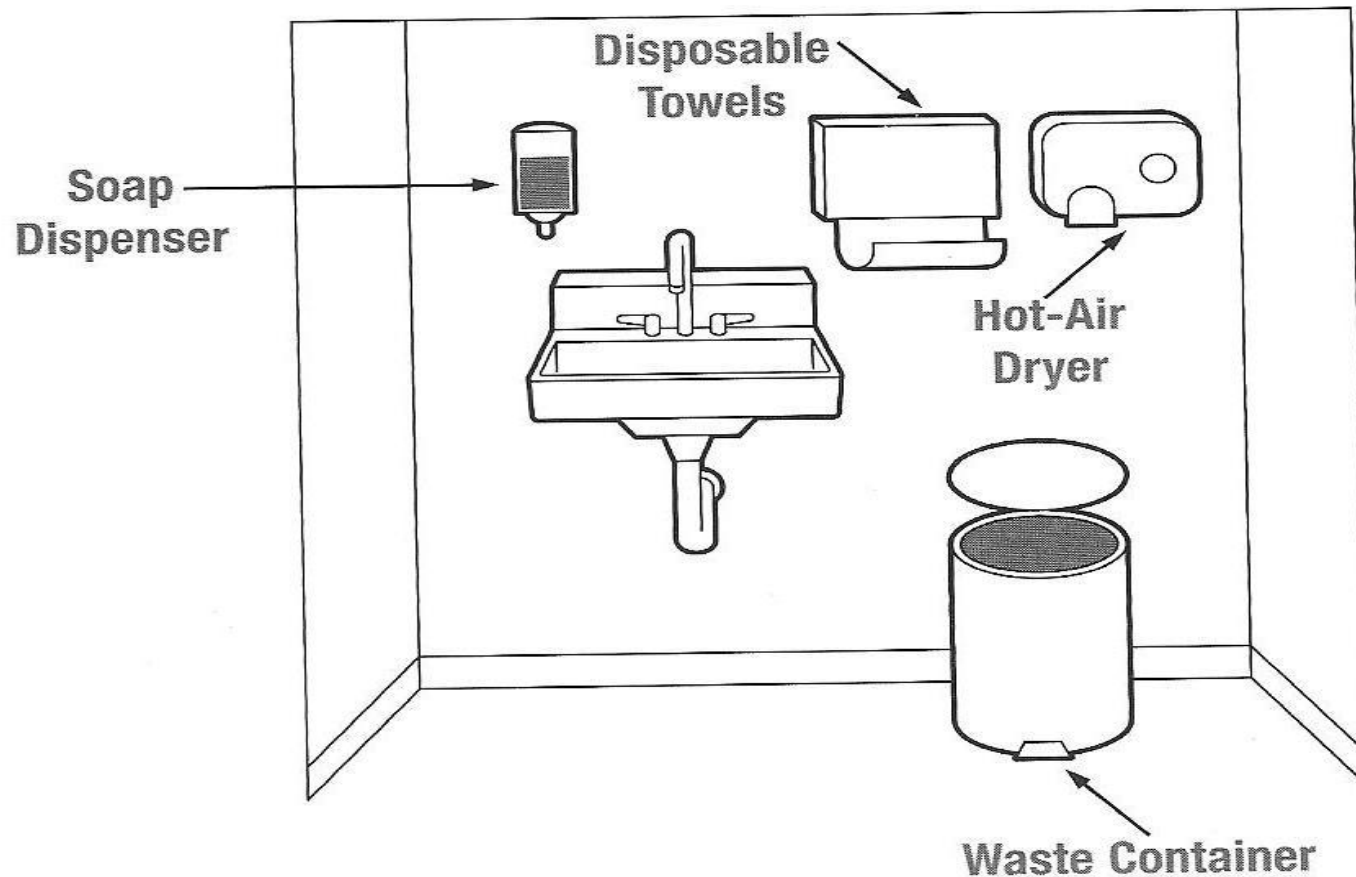
An Acceptable Dry-Storage Facility

Dry-storage temperatures should be between 50°F to 70°F (10°C to 21°C) and the humidity should be between 50 and 60 percent if possible.

Facility design considerations

■ Restrooms

- Every establishment should have **separate** restroom facilities for customers & employees
- Restrooms must have:
 - Fully equipped hand washing stations
 - Self closing doors
 - Adequate stock of supplies
 - Covered waste containers
 - Regular cleaning (minimum once a day)



An Acceptable Handwashing Station

A handwashing station must be equipped with hot and cold running water, soap, a means to dry hands, and a waste container (if disposable towels are used).

Removing Waste

When cleaning food production areas, **waste must be handled and disposed of correctly** in order to:-

- Prevent accidents
- Prevent infections
- Avoid creating a fire hazard
- Prevent pest infestation
- Avoid pollution of the environment
- Comply with the law



Removing waste continued

Waste includes all packaging, food trimmings and any leftover food



Waste bins should be leakproof, waterproof, pestproof and have tight-fitting lids



Waste bins are a perfect environment for promoting the growth of bacteria and need to be treated as a major source of contamination.



Removing waste continued

Always use the following guidelines;-

- Empty bins regularly
- When handling rubbish bins and waste food always wash your hands
- Waste bins and their lids must be thoroughly cleaned using a strong detergent and disinfectant
- Store waste bins in the correct designated areas, away from food preparation areas, corridors and fire exits

What is cleaning

Cleaning consists of 3 basic steps:

1. The removal of **visible** dirt
 2. Then removal of **residual** dirt by *physical, chemical or thermal* energy
 3. Rinsing to remove **remaining** dirt and **chemicals**
- These steps should be followed by **disinfecting**



How cleaning is achieved

Cleaning requires the application of energy to effect the removal of dirt from a surface. There are 3 ways to use energy in order to clean

- *Physical energy*... Manual labour
- *Thermal energy*... Hot water or steam
- *Chemical energy* ...Soaps and detergents
- Detergent will dissolve Grease and fat but not kill bacteria

Factors affecting the effectiveness of detergents

Factors that effect the use of detergents:

- Water hardness
- Concentration and Temperature of the solution
- Time (soak)
- Physical force with which it is applied

Machine warewashing

- High temperature machines
 - Rely on **hot water** to clean & sanitize
 - The final sanitizing rinse must be at least **82C**

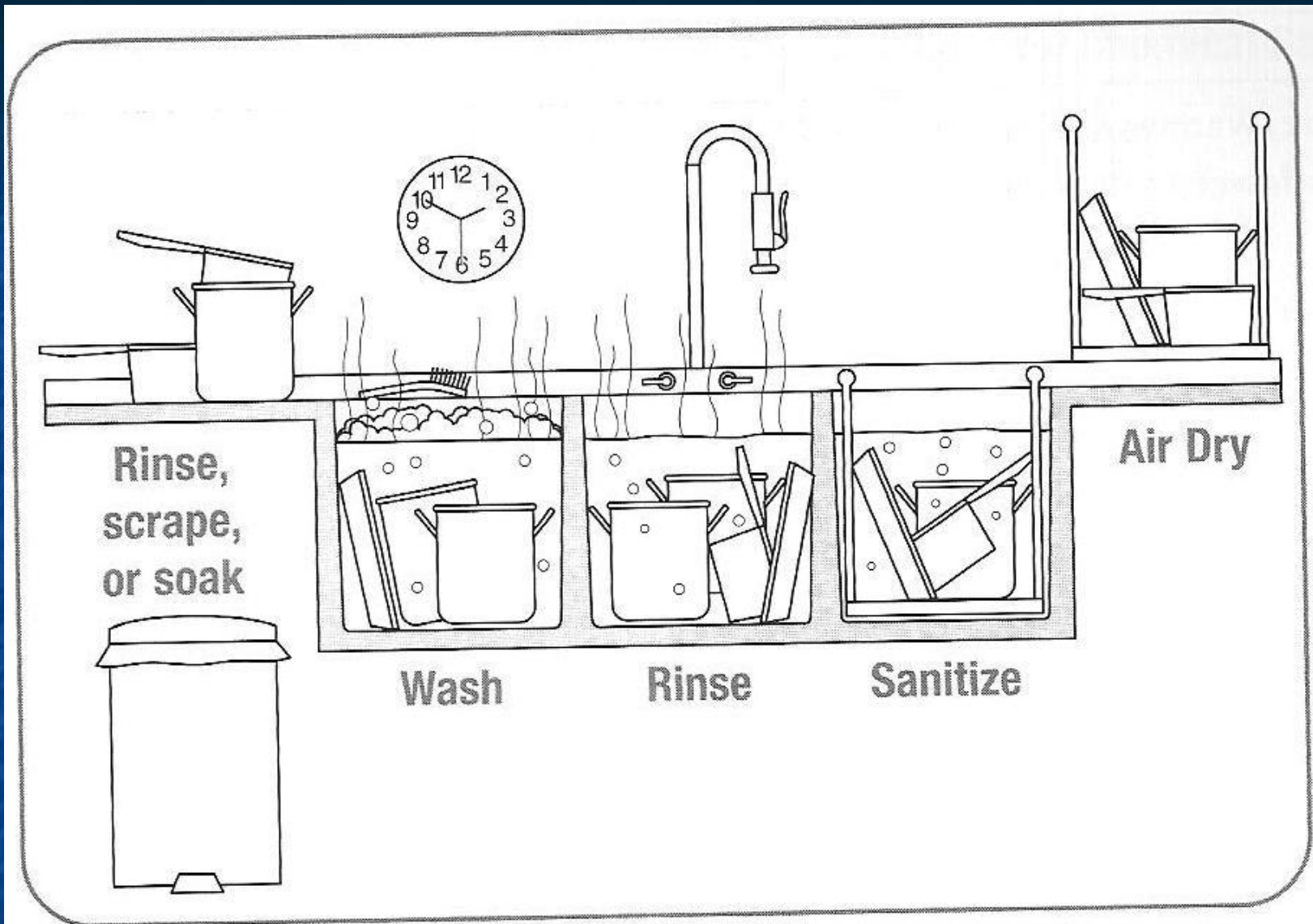


- Chemical sanitizing machines
 - Rely on **chemicals** to sanitize
 - Rinse water temperature should be **24-49C**



Manual warewashing

- Step 1:
 - Rinse, scrape or soak all items before washing
- Step 2:
 - Wash items in a detergent solution (min.43C)
- Step 3:
 - Immerse or spray-rinse items in second sink
- Step 4:
 - Immerse items in chemical-sanitizing solution
- Step 5:
 - Air dry items



Three-Compartment Sink for Manual Washing, Rinsing, and Sanitizing

Cleaning food production areas

Cleaning **food production** areas should be carried out as follows;-

- **Never clean during food preparation,** unless it is done to clean up spillages etc
- Clean stoves and floors **after every service**
- Clean walls and floors **when the kitchen is closed**
- Clean fridges shelves etc at **sensible times**

Cleaning equipment & utensils

It is easier to clean equipment and utensils **immediately after using them**

If you leave them the **food debris dries up** and becomes difficult to remove

Leaving dirty equipment and utensils make your area look dirty and unprofessional, and also **encourages pests, bacteria and cross contamination**



continued



- All equipment **should be turned off and dismantled** before cleaning in order to;-
 - Avoid injury
 - Ensure all relevant parts are cleaned
 - Ensure that the machine works efficiently
 - Conserve energy

Cutlery, dishes and glass are usually washed in professional dishwashers

Sanitizing equipment & utensils

Visibly clean is not enough.

The cleaning process should be followed by sanitizing in the following way;-

- Hot water (82 degrees Celsius)
- Chemical sanitizer
- NO RINSING OR ANY OTHER CLEANING SHOULD TAKE PLACE AFTER THE SANITIZING PROCESS



Cleaning is a job for everyone

Hygiene standards are defined by **management**, and should be clearly defined and enforceable

Everyone has a duty to maintain standards

Cleaning staff **must be trained**

All employees should be trained to **clean-as-you-go**



continued

Management must provide the **correct tools and cleaning agents**

Management should provide a **written schedule** to include the following;-

- **What** is to be cleaned
- **Who** is to clean it
- **When** it is to be cleaned
- **How** it is to be cleaned
- **Which** solutions, tools, and precautions.
Protective clothing etc

Kitchen cleaning schedule example

Kitchen cleaning schedule - To be completed weekly w/c.....

AREA/EQUIPMENT	FREQUENCY OF CLEANING	METHOD OF CLEANING	DATE CLEANING DUE	PERSONAL PROTECTIVE EQUIPMENT	CLEANING COMPLETED		GUIDANCE	MANAGERS INSPECTION SIGNATURE
					DATE	INITIAL		
							USE OF COLOUR CODED EQUIPMENT - YELLOW	
HEATED TROLLEYS	WEEKLY	Warm water with washing up liquid Sanitizer. Cream cleaner		Tabard / apron Gloves			Ensure trolley is cool before cleaning Clean thoroughly Wipe up spillages immediately	
FRIDGE	WEEKLY	Warm water with washing up liquid Sanitizer		Disposable apron / tabard Gloves			Remove all shelves wash thoroughly. Wash door seal	
SINK	DAILY /WEEKLY	AS ABOVE Cream cleaner for stubborn stains		AS ABOVE			Clean thoroughly	
REFUSE AREA	WEEKLY	Warm water with washing up liquid Sanitizer		AS ABOVE			Clean thoroughly wipe shelves sweep and mop	
CUPBOARDS/ SHELVES	WEEKLY	AS ABOVE		AS ABOVE			Wash and dry thoroughly	
UTENSILS	AFTER USE	Dish washer		AS ABOVE			Wash and dry thoroughly	
FOOD COUNTER		Warm water with washing up liquid Sanitizer		AS ABOVE			Wipe up spillages immediately	
CUTLERY	AFTER USE	Dish washer		AS ABOVE			Wash and dry thoroughly	
TOASTERS	AFTER USE	Warm water with washing up liquid Sanitizer		AS ABOVE			Empty crumb tray	
MICROWAVE	WEEKLY	AS ABOVE		AS ABOVE			Wash and dry thoroughly	
KETTLE	WEEKLY	AS ABOVE		AS ABOVE			Wash and dry thoroughly	
WALLS / TILES	MONTHLY	AS ABOVE		AS ABOVE			Wash thoroughly	
SKIRTING	WEEKLY	AS ABOVE		AS ABOVE			Clean and mop and dry thoroughly	
WINDOW SILLS	WEEKLY	AS ABOVE		AS ABOVE			Clean / wipe thoroughly	

Precautions when using chemicals for cleaning sanitizing and disinfecting

The use of chemicals in cleaning, sanitizing and disinfecting is **controlled by European and International legislation.**

This legislation **requires** employers to make available to employees information concerning **the safe use of chemicals and all necessary safety equipment.**

"Health & Safety at work act"



Analyze the Situation

Carlos Magana was a Spanish-speaking custodian working in a health care facility kitchen. Bert LaColle was the new Food and Beverage Director. Mr. LaColle instructed Mr. Magana to clean the grout between the 4 x 4 red quarry kitchen tile with a powerful cleaner that Mr. LaColle had purchased from a chemical cleaning supply vendor. Mr. LaColle, who did not speak Spanish, demonstrated to Mr. Magana how he should pour the chemical directly from the bottle to the grout, then brush the grout with a wire brush until it was white.

Analyze the Situation

Because the cleaner was so strong, and because Mr. Magana did not wear protective gloves, his hands were seriously irritated by the chemicals in the cleaner. In an effort to lessen the irritation to his hands, Mr. Magana decided to dilute the chemical. He added water to the bottle of cleaner, not realizing that the addition of water would cause toxic fumes. Mr. Magana inhaled the fumes while he continued cleaning, and later suffered serious lung damage as a result.

Analyze the Situation

1. Did the facility fulfill its obligation to provide a **safe working environment** for Mr. Magana?
2. What should Mr. LaColle have done to **avoid a violation?**

continued

When using chemicals care should be given to the following;-

- Always read and follow the instructions on the label, pay attention to first aid procedures
- Use protective clothing, gloves, etc
- Use the correct product for the job
- Always keep chemicals in their original container

PERSONAL PROTECTION KEY	
1. Eye protection	2. Eye protection
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99. Eye protection	100. Eye protection



continued

- Never put chemicals into food containers
of food into chemical containers
- Never mix chemicals, they may react differently
- Only dilute chemicals as required
- Always use the correct concentration
- Do NOT dispose of chemicals in sinks
- Clean tools and store away from food

CLEANING TIME...

- Divide the class in 4 groups:
 - Freezer-refrigerator (2p)
 - Dry storage (2p)
 - Main kitchen (4p)
 - Back kitchen / receiving area (4p)
- Conduct a thorough inspection in your assigned area
- Record your findings & provide suggestions (in writing!)
- Clean and organize your assigned area
- Create a weekly cleaning schedule