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Food Safety



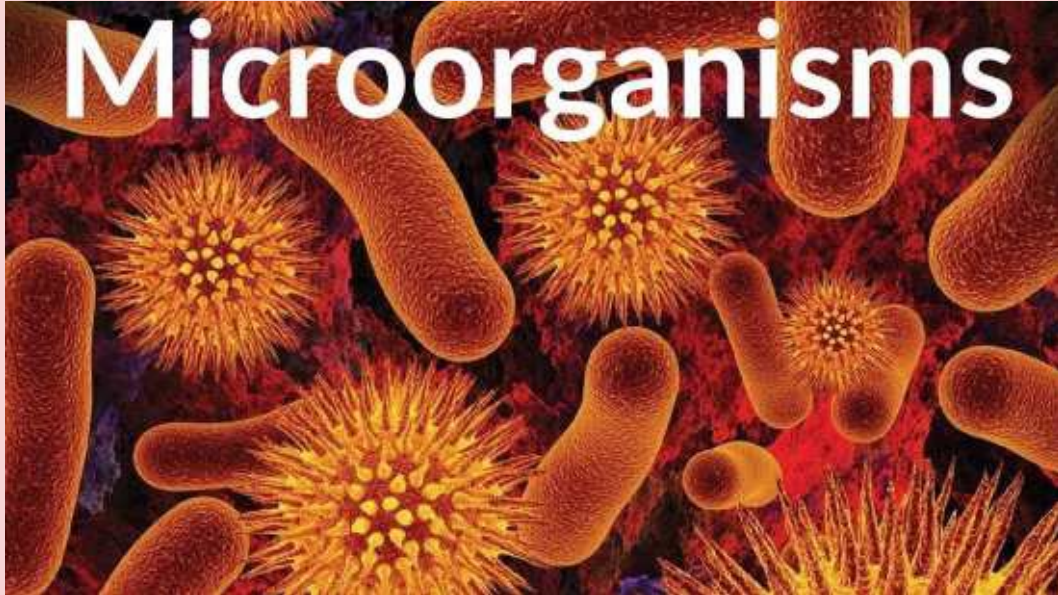
Learning Objectives

- Identify the different types of microorganisms and pathogens.
- Recognize the conditions that support the growth of pathogens.
- Learn how to prevent food-borne illnesses.
- Understand how food handlers contaminate food.
- Recognize the importance of accurate portioning.

Kitchen Responsibilities

- Keep stations clean.
- Properly handle and store all food.
 - When handling “ready-to-eat” food items...if you don’t cook it, glove it!
 - Wash hands, cutting boards, knives, when switching between meats and vegetables.
- Clean all small equipment as you go.
- Store all pots, pans, cutting boards on the rolling rack.
- Leave kitchen clean at end of class.





- Small, living organisms that can only be seen through a microscope
- Some are harmless or even beneficial
 - Mold for blue cheese
 - Yeast for bread
- Some are harmful, called pathogens
 - Can make sick by eating
 - Can make sick by producing toxins

Types of pathogens

■ Viruses

- Survive freezing and cooking
- Need a host to reproduce

■ Bacteria

- Produce spores & toxins

■ Parasites

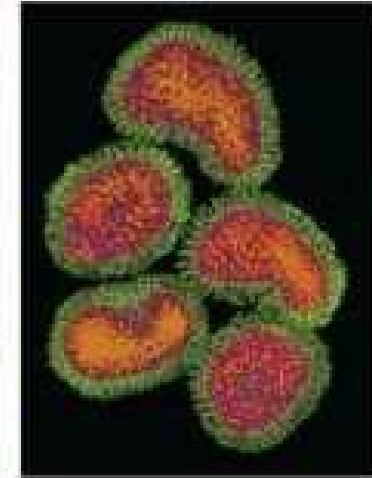
- Must be in flesh of an animal to survive

■ Fungi

- Mostly spoils foods



a Bacteria



b Viruses



c Fungi



e Parasitic worm

Conditions supporting the growth of pathogens

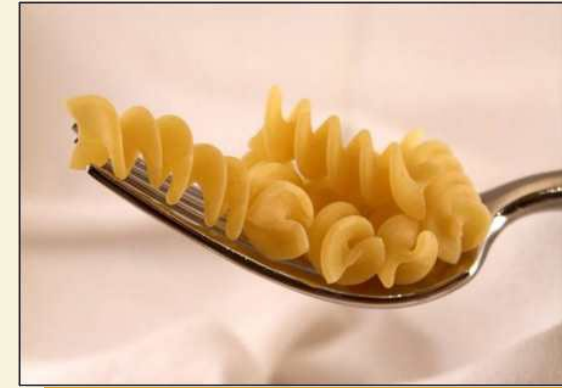
- **Food**
- **Acidity**
- **Temperature**



- **Time**
- **Oxygen**
- **Moisture**

Pathogens: Food

- Critical factor for microbial growth is the availability of nutrients and energy.
- Microbes need carbohydrates, fats, proteins, metals, and vitamins to survive, just like animals.
- Pathogens grow best on carbohydrates and protein



Pathogens: Acidity

- Pathogens grow best in food that contains little or no acid
- Culinary Acids
 - Lemons/limes
 - Vinegars/pickles
 - Vinaigrette
 - Fermentatively generated acids
 - Lactic acid
 - Acetic acid



Pathogens: Time

- Bacteria can **DOUBLE** their numbers in as little as 20 minutes.
- After 4 hours, can make someone sick.

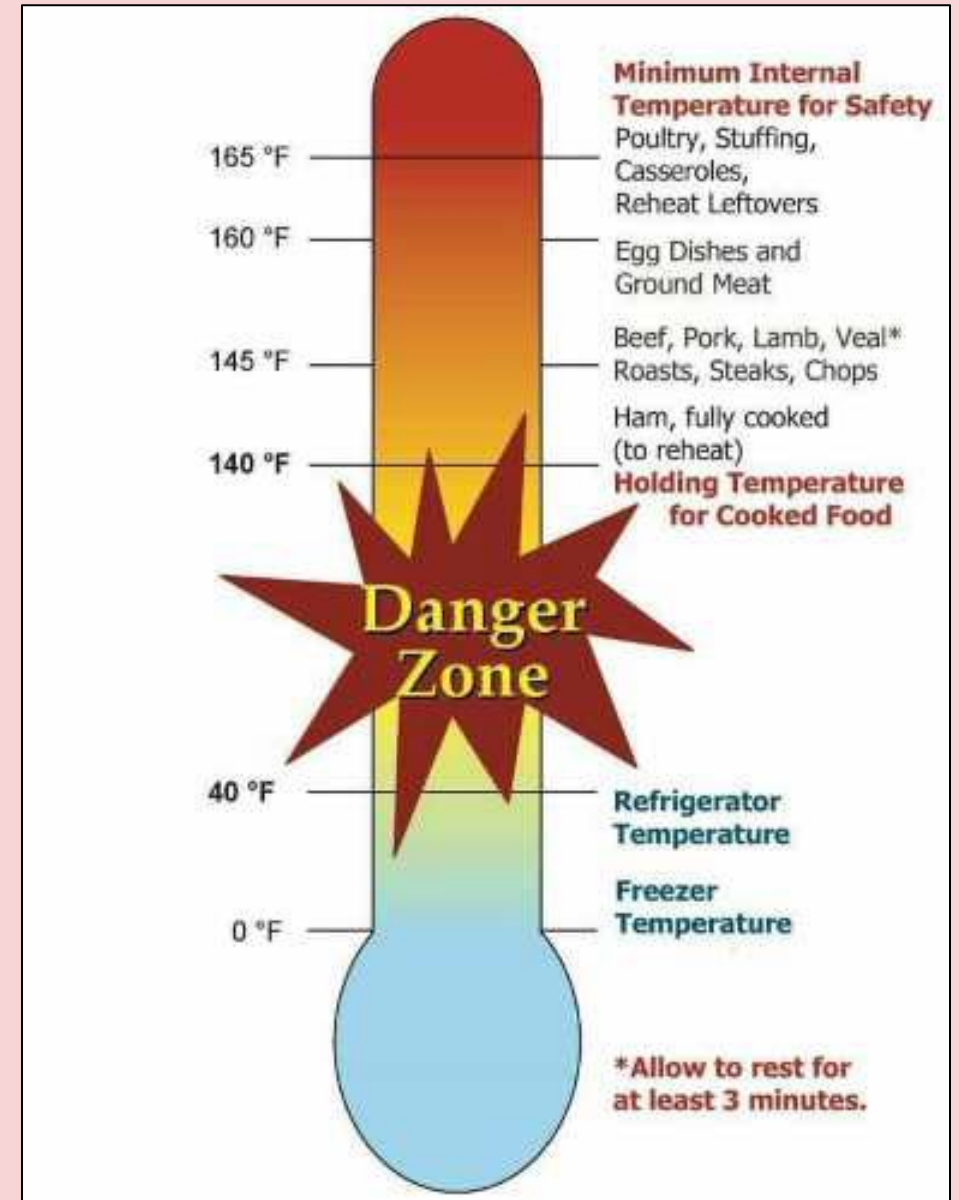


Pathogens: Temperature

Temperature Danger Zone

41°F - 135°F

Ideal for pathogen growth



Pathogens: Oxygen



Pathogens can grow with OR without oxygen

- Aerobic
- Anaerobic

Pathogens: Moisture

- Pathogens need moisture to grow
- Moisture comes from water
 - Food feels moist to touch
 - High-fat foods such as peanut butter and avocado are oily but not moist



Preventing Foodborne Illness

Control time and temperature

- Store, cook, hold, cool, and reheat food to proper temperatures in proper time
- Keep out of Temperature Danger Zone **41°F - 135°F**

Prevent cross-contamination

- Don't allow ready-to-eat food to come into contact with contaminated hands or surfaces or raw food

Preventing Foodborne Illness

- Practice good personal hygiene.
 - Don't come to work sick.
 - Wash hands appropriately.
- Purchase food from approved, reputable suppliers.
 - Examine reports of FDA and USDA.
- Properly store and label food items.

Food Labeling

- Label all kitchen food and non-food items
- Store chemicals separately, away from food
- Label foods requiring time and temperature control with:
 - Date food was made
 - Use by date
- Label foods not being monitored for temperature control with:
 - Time removed from refrigeration
 - Time it must be discarded



How Foodhandlers Contaminate Food

They have a
foodborne illness

They have
diarrhea, nausea,
or vomiting

They have
infected cuts

They live with
someone who is
ill

They
contaminate
their hands

Portioning

- Important for cost control
- Improves yield from production
- Helps ensure service quantities needed



Scoop Sizing



Color	Capacity (oz.)	Capacity (cups)	Servings per qt.
Purple	3/4	3/32	40
Black	1	1/8	30
Red	1 1/3	1/6	24
Yellow	1 5/8	7/32	20
Blue	2	1/4	16
Green	2 2/3	1/3	12
Gold	3	3/8	10
Grey	4	1/2	8
White	5 1/3	2/3	6
Cyan	6	3/4	5
Red	8	1	4

Portioning Example

- 5 gallons of rice prepared
- Service expectation: 200 portions
- #10 scoop yields 200 portions
- #8 scoop yields 160 portions
- **Shortfall** = 40 portions



Impact of Improper Portioning

- Must produce more product to meet expectations
- Increased product used = increased cost
- Making product twice = increased workload and labor costs
- Improper portion size delivered to customers
- May run out of product due to excessive portions



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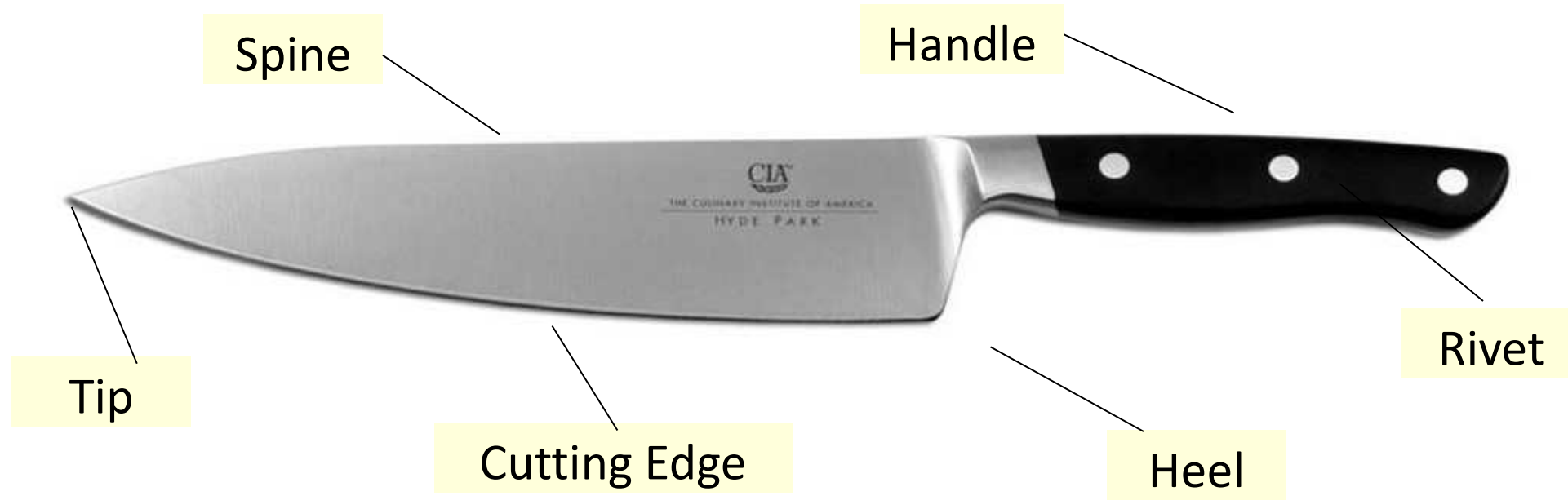
Knife Skills



Learning Objectives

- Safely hold and handle a knife.
- Select a knife appropriate for its intended use.
- List, identify, and execute commonly used knife cuts.

Anatomy of a Knife



Knife Selection

Use the RIGHT knife for the job!!

French Knife



chopping, slicing, dicing,
mashing

Paring Knife



peeling, trimming, and shaping
fruits and vegetables

Boning Knife



cutting meat away from bones

Knife Selection

Slicer



slicing cooked meats and poultry

Serrated Knife



slicing through the crusts of bread

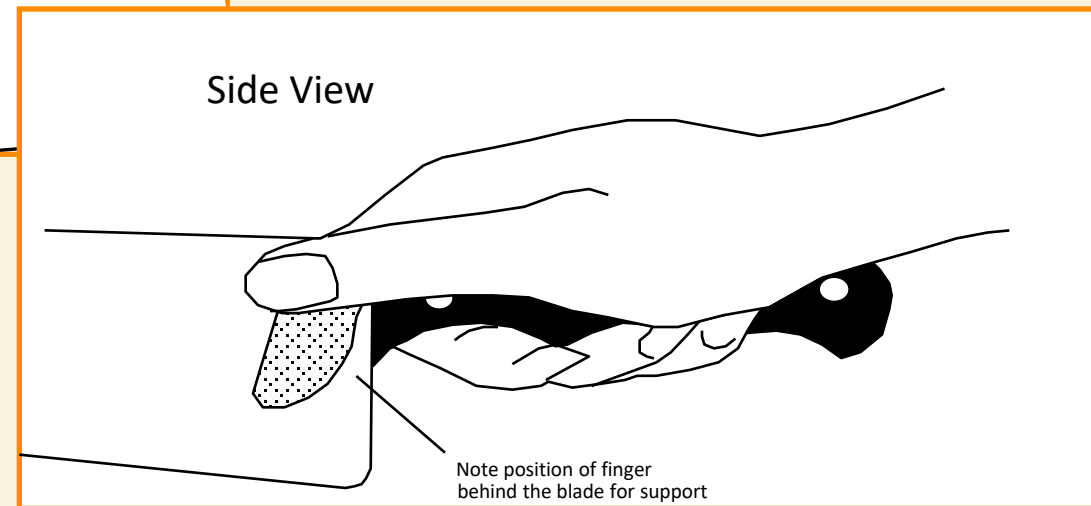
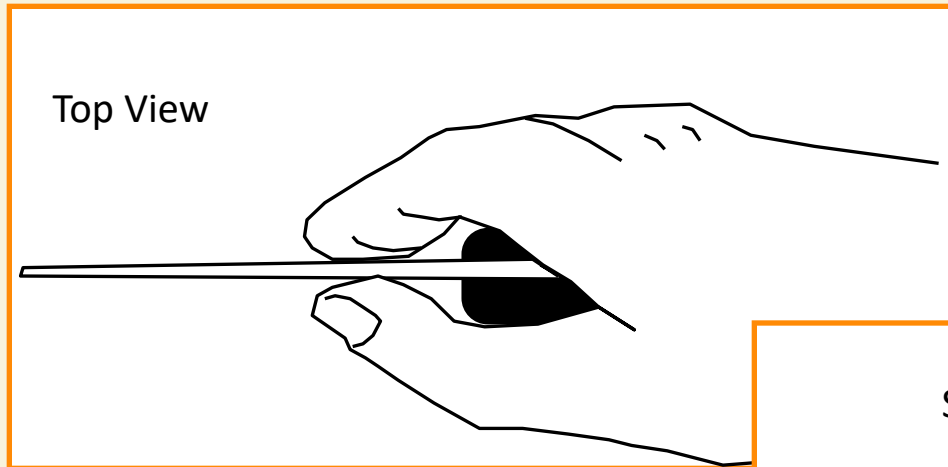
Honing and Sharpening

- **Sharpening** = removing metal to redefine the cutting edge.
- **Honing** = realigning/straightening the existing metal of the cutting edge.



Holding a Knife

Grasp the knife by the handle, allowing your thumb and index finger to rest on the blade for support.

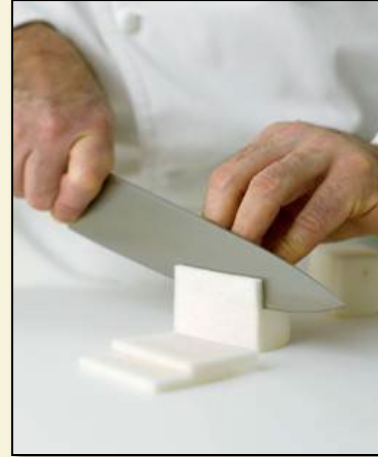


Knife Safety

- Always use a sharp knife!
- Hold the knife firmly in your hand and cut away from your body.
- Always use a cutting board.
- Place knives on flat surfaces, away from the table edge, with the blade facing away from you.
- Keep knives in clear sight, never covered.
- Do not grab blindly for a knife.
- If a knife falls off the table, do not attempt to catch it.
- Pass a knife to someone using the handle, never the blade.
- When walking with a knife, carry it with the point down.

How To Julienne and Dice

1. Square off the ends and sides.
2. Slice into even slabs of the same thickness.
3. Stack the slabs and slice into even sticks.
4. Gather the sticks and cut into even cubes.



Julienne Sizes

Fine Julienne

$1/16 \times 1/16 \times 1$ to 2 in.



Julienne/Allumette

$1/8 \times 1/8 \times 1$ to 2 in.



Batonnet

$1/4 \times 1/4 \times 2$ to 2½ in.



Dice Sizes

Small Dice

$\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$ in.



Medium Dice

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ in.



Large Dice

$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$ in.



Brunoise Sizes

Fine Brunoise

$\frac{1}{16} \times \frac{1}{16} \times \frac{1}{16}$ in.



Brunoise

$\frac{1}{8} \times \frac{1}{8} \times \frac{1}{8}$ in.



Other Classic Vegetable Cuts

Tourné

2 in. long with 7 faces



Oblique

Uniform pieces with
2 angled cuts



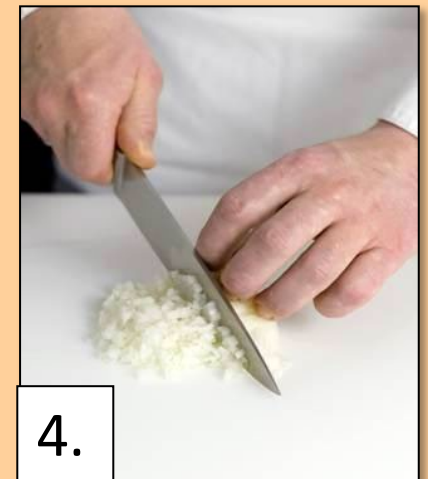
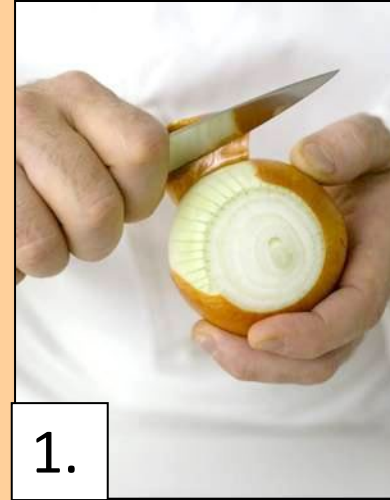
Rondelle

$\frac{1}{2}$ to $\frac{1}{8}$ in. thick rounds



Dice/Mince Onions & Shallots

1. Cut off tip end, peel, and cut through root to tip.
2. Make several evenly spaced parallel cuts, without cutting the root.
3. Make two to three horizontal cuts, without cutting the root.
4. Make even crosswise cuts working from tip to root.



Mince Garlic

1. Peel cloves
2. Slice cloves
3. Cut cloves into a rough chop
4. Using a rocking motion, chop to desired fineness



Chop/ Mince Herbs



1. Wash, dry, and remove leaves from stems; roll into a tight ball and chop roughly.
2. Move hand to front of knife and chop using a rocking motion.
3. Continue cutting to desired fineness.

Chiffonade Herbs

1. Remove leaves
2. Stack the leaves, placing smaller leaves on top of larger leaves
3. Roll into a cylinder
4. Make fine parallel cuts across the cylinder



Suprême Citrus Fruit



1. Cut away the ends.
2. Cut away the rind and all the pith, leaving as much flesh as possible.
3. Cut along each side of the membrane to cut away the segments.



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Mise en Place



Learning Objectives

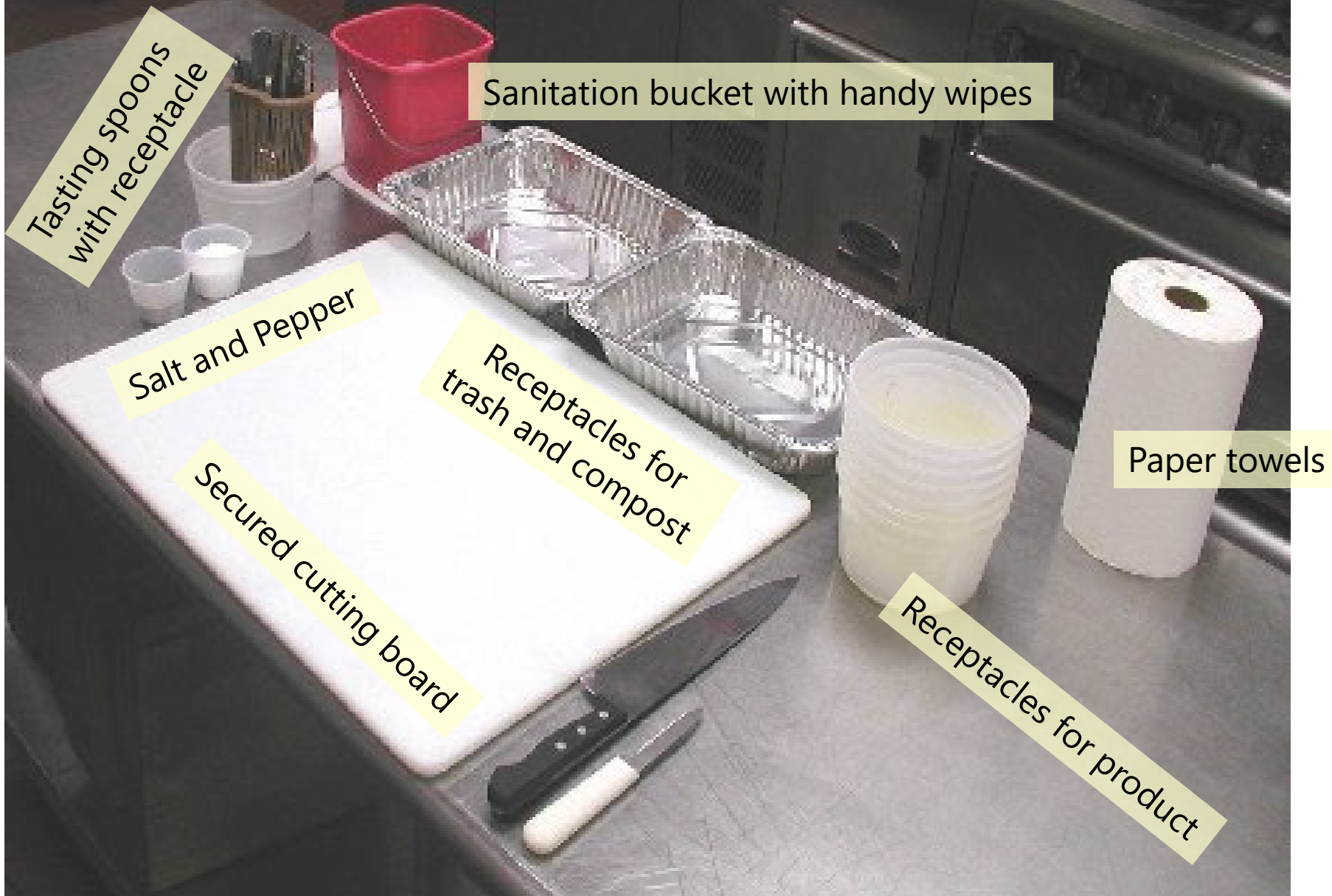
- Demonstrate how to set up your workstation and organize your mise en place.
- Review factors that improve efficiency for preparation and service.
- Practice proper recipe mise en place.
- Create a timeline of work to be completed.
- Prioritize your needs and production.

Mise en Place

- French term for “everything in its place”
- What does this mean?
 - A clean, organized workstation
 - Recipe mise en place
 - Prep time vs. service
 - Physically ready to cook
 - Mentally prepared to cook – proper state of mind!



Mise En Place Starts at the Work Station



Mise en Place: Organization

- Set table and cutting board at correct height.
- Use bain-maries with hot water for tools.
- Set cutting board on sheet pan for messy jobs.
- Have a written daily plan - start with the **end** in mind.
- Use standardized recipes.
- Consolidate tasks (have one person cut all the onions, garlic, ...).
- Use timers and thermometers (when necessary).
- Use the right equipment for the job!



Mise en Place: Workflow

- Set up workstation to facilitate flow of product
- Establish a direction of flow:
Raw product → product being prepped → finished product
- Avoid crowding your station or cutting board
- Avoid crossing over the work completed
- Volume preparations requires keeping food safety in mind
- Hot food held hot, cold food on ice

Recipe Mise en Place

- Read through the recipe in its entirety before starting.
- Understand all terms and definitions. Ask questions!
- Check yield, temperature, cooking times.
- Gather ingredients before preparation time: FIFO – First In First Out.
- Complete the “pre” steps.
- Accurately measure or weigh each ingredient.
- Follow the listed steps in order.
- Time cooking periods accurately.

Create a Timeline

- Start with the end in mind.
- List the ingredients and quantity needed for the recipe.
- Determine equipment and amount needed for the recipe

MISE EN PLACE WORKSHEETS

MISE EN PLACE WORKSHEET (RECIPES)

Date: _____			
Recipe: _____			
Ingredient	Amount	Tool	Amount

Date: _____			
Recipe: _____			
Ingredient	Amount	Tool	Amount

Create a Timeline

- Combine all ingredients and equipment onto one list.
- Any identical prep items in multiple dishes?
- Vegetable cuts: dice and mince onions, carrots, garlic
- Peel all vegetables at once.
- Measure and scale all dry and wet ingredients.

MISE EN PLACE WORKSHEET (TALLY SHEET)

Date: _____

Tally Sheet
Combines ALL Items from Day

Ingredient	Amount	Tool	Amount

Create a Timeline

- Start with the end in mind
- What items are a priority?
- What can be done later?
- What takes the longest?
 - Cooking (simmering, braising, ...)
 - Marinating
 - Resting, proofing, setting, etc.
- List in priority order, not recipe order

MISE EN PLACE WORKSHEET (TIMELINE)

Date: _____ Timeline: Service at

Step #/ Start Time	Recipe	Action	Time Due

Prioritize your needs

- Determine order to be completed
- Assign tasks to Team members
- Divide tasks evenly based on time, difficulty, etc.

SAMPLE ACTION PLAN WORKSHEET (USEFUL FOR GROUP PROJECTS)

	Project	Goals	Tasks	Responsibility	Timeline	Evaluation	Check
ACTION PLAN	What is the theme of your project?	What are the goals of your project?	What are the steps that need to be taken to accomplish your goals?	Who in your team is responsible for each task?	When does each task need to be completed? <small>(How many minutes or hours?)</small>	Were you successful in accomplishing your goals and tasks on time?	√
Sample	Knife Skills	Learn how to julienne a potato	1. Make sure the work station is set up.	Peter	Today <small>(in 5 minutes)</small> Starting Time: 12:45 PM	No, I took way too long to finish Task # 1.	X
			2. Make sure the knives are sharp and honed.	Peter and Jennifer	Today <small>(in 5 minutes)</small> Starting Time: 12:55 PM	Yes, I finished on time, but I would like to improve my knife cuts. They were too thick.	√
1							
2							
3							
4							
5							
6							

A Few Other Points

- Production lists will reduce trips to walk-in, dry storage, dish area.
- Use carts to move multiple items at the same time.
- Each trip for one item on average = 3 to 5 minutes, 10 items = 30 to 50 minutes.
- 1 trip for 10 items using a list = 10 minutes or less. Be aware of food safety issues.



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Any Questions?