



COOKING FOR HEALTHY KIDS



Culinary Skills Training for School Nutrition Professionals



Course Goals

1. Improve the culinary skill level of school nutrition professionals.
2. Improve the quality of meals served to students.
3. Increase the consumption of vegetables, fruits, whole grains, plant proteins and lean meats amongst school-aged children.



Learning Objectives

- Apply the essential concept of *mise en place* and understand the benefits of kitchen organization.
- Demonstrate healthier cooking methods that apply the nutrition principles of the *Dietary Guidelines for Americans*.
- Demonstrate proper use of a chef's knife.
- Demonstrate roasting, steaming, blanching and quick pickling of vegetables.
- Demonstrate how to enhance flavors of foods using herbs, spices, culinary acids, and other ingredients.
- Build school meals in an attractive and appealing manner.
- Learn and apply scratch baking principles and techniques.



Week Overview

Day 1: Culinary Basics: Mise en place and Knife Skills

Day 2: Cooking Vegetables for Greater Appeal

Day 3: Success with Salads and Salad Bars





Daily Schedule

Culinary Lecture and Demonstration

Practical Kitchen Experience

Technique / Recipe Evaluation

Kitchen Keys

Nutrition Keys



Key Focuses

- Culinary technique
- Product evaluation
- How am I going to apply what I learned?





Kitchen Keys: Weights & Volumes

Day One



Weights & Measures in School Foodservice

- Accurate weights and measures are essential for producing high-quality, consistent meals
- Recipes depend on correct units, tools, and techniques
- Basic math skills support recipe scaling, conversions, and adjustments



Weight vs. Volume

- **Weight** measures an item's **mass** (ounces, pounds)
- **Volume** measures the **amount of space an item occupies** (teaspoon, tablespoon, fluid ounce, cup, pint, quart, gallon)
- Weight and volume are not interchangeable





Why Weight is Often More Accurate



- A pound of bricks and a pound of feathers weigh the same, but take up different amounts of space
- Weight is more accurate for solid ingredients over 2 ounces
- Liquids are best measured by volume



Popcorn: Why We Measure the Right Way

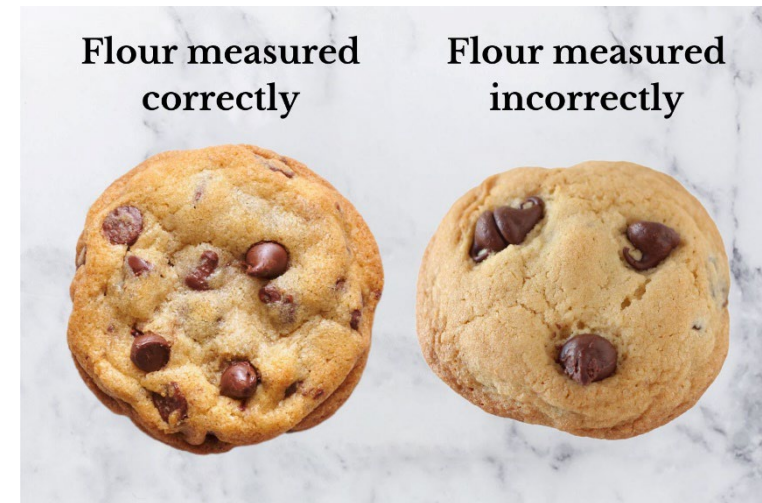
Demonstration





Why Accuracy Matters

- Measuring solids by volume can lead to large variations
 - Example: Flour amounts vary based on scooping, packing, and leveling
- Small differences can affect final product quality



Common Measuring Tools

- Scales measure weight
 - Most accurate for dry ingredients
- Measuring cups and spoons measure volume
 - Works best for liquids
- Scoops measure volume
 - The scoop number equals scoops per quart



Dry vs. Liquid Measuring Tools

- **Liquid cups** include a **spout** and **headspace** to prevent spills
- **Dry cups** have **straight rims** for leveling
- **Ounces** measure weight; **fluid ounces** measure volume





Proper Measuring Techniques

- Lightly spoon dry ingredients and level with a flat edge
- Avoid tapping or shaking measuring containers
- Brown sugar is usually packed unless stated otherwise





Additional Best Practices

- Use a scale whenever possible
- Check liquid measurements at eye level using the meniscus
 - Meniscus – the natural curve that forms at the surface of a liquid in a measuring cut
- **Measure all ingredients before starting the recipe**





Serving and Portion Control

- Serving size impacts yield, cost, and satisfaction
- Scoops ensure consistent portions
- Incorrect portions lead to waste and shortages





Volume Measure Equivalencies

- 3 teaspoons = 1 tablespoon
- 16 tablespoons = 1 cup
- 2 cups = 1 pint
- 2 pints = 1 quart
- 4 quarts = 1 gallon

Weights and Measures Equivalencies

dash	.....	less than 1/8 teaspoon
3 teaspoons (tsp.)	.....	1 Tablespoon (1/2 fl. oz.)
2 Tablespoons (Tbsp.)	.....	1/8 cup (1 fl. oz.)
4 Tablespoons	.....	1/4 cup (2 fl. oz.)
8 Tablespoons	.....	1/2 cup (4 fl. oz.)
16 Tablespoons	.....	1 cup (8 fl. oz.)
1 gill	.....	1/2 cup
2 cups	.....	1 pint
2 pints	.....	1 quart (approx. 1 liter)
4 quarts	.....	1 gallon
8 quarts	.....	1 peck
4 pecks	.....	1 bushel

Scoop Sizes

- The scoop number shows how many level scoops equal one quart
- Using the correct scoop improves the consistency and yield control

Portion Control Chart			
Control accurate portions and food costs with the RightWay Food Service Portion Control Chart. Find the correct disher/scoop utensil for your serving size by using the below color-coded chart. For additional resources, please contact your sales rep or visit our website at www.rightwayfoodservice.com .			
Color	Disher/Scoop Size #	Capacity (ounces)	Capacity (cups)
Orange	40	$\frac{3}{4}$	$\frac{3}{32}$
Teal	30	1	$\frac{1}{8}$
White	24	$1 \frac{1}{2}$	$\frac{1}{6}$
Gray	20	$1 \frac{5}{8}$	$\frac{7}{32}$
Ivory	16	2	$\frac{1}{4}$
Green	12	$2 \frac{3}{4}$	$\frac{1}{3}$
Blue	10	3*	$\frac{3}{8}$ *
Yellow	8	4	$\frac{1}{2}$
Red	6	$5 \frac{1}{2}$	$\frac{2}{3}$

*Disher/Scoop capacity: 3 1/4 oz.

Not all foods measure the same:
16 ounces = 4 cups of flour
16 ounces = 3 cups of brown sugar
16 ounces = 2 1/2 cups of granulated sugar

RightWay
Food Service

1-800-451-3663 • 3255 Saint Johns Rd • Lima, OH 45804 • www.rightwayfoodservice.com

PORTION SCOOP SIZE CHART		
Find the best scoop for your needs.		
SIZE	COLOR	CAPACITY (FLUID OZ)
# 4	Orange	8
# 5	Teal	6.40
# 6	White	5.33
# 8	Gray	4
# 10	Ivory	3.20
# 12	Green	2.67
# 16	Blue	2
# 20	Yellow	1.60
# 24	Red	1.33
# 30	Black	1.07
# 40	Orchid	0.80
# 50	Rust	0.64
# 60	Pink	0.53
# 70	Plum	0.46
# 100	Orange	0.32

RW Restaurantware
ECO-FRIENDLY SUPPLIES

Ladles and Pan Capacity

- Ladles measure volume and are labeled in fluid ounces
- Steam table pans are filled to about 85% capacity
- Understanding pan capacity supports accurate production planning

Steam Table Pan Capacity							
Pan Size	Depth	Full Topped-off Capacity			85% Capacity		
		Cup	Qt	Ltr	Cup	Qt	Ltr
Full/Hotel Pan	2"	33.2	8.3	7.9	28.2	7.1	6.7
	4"	56.0	14	13.25	47.6	11.9	11.3
	6"	84.0	21	19.87	71.4	17.9	16.9
Half Pan	2"	17.2	4.3	4.07	14.6	3.7	3.5
	4"	26.8	6.7	6.34	22.8	5.7	5.4
	6"	40.0	10	9.46	34.0	8.5	8.0
Torpedo Pan	1"	8.4	2.1	1.99	7.1	1.8	1.7
	2"	14.8	3.7	3.5	12.6	3.1	3.0
	4"	22.8	5.7	5.39	19.4	4.8	4.6
	6"	32.8	8.2	7.76	27.9	7.0	6.6
Two-thirds Pan	1"	16.0	4	3.79	13.6	3.4	3.2
	2"	22.4	5.6	5.3	19.0	4.8	4.5
	4"	37.2	9.3	8.8	31.6	7.9	7.5
	6"	56.0	14	13.25	47.6	11.9	11.3
Third Pan	2"	10.4	2.6	2.46	8.8	2.2	2.1
	4"	16.4	4.1	3.88	13.9	3.5	3.3
	6"	24.4	6.1	5.77	20.7	5.2	4.9
Fourth Pan	2"	7.2	1.8	1.7	6.1	1.5	1.4
	4"	12.0	3	2.84	10.2	2.6	2.4
	6"	18.0	4.5	4.26	15.3	3.8	3.6
Sixth Pan	2"	4.8	1.2	1.14	4.1	1.0	1.0
	4"	7.2	1.8	1.7	6.1	1.5	1.4
	6"	10.8	2.7	2.56	9.2	2.3	2.2
Ninth Pan	2"	2.4	0.6	0.57	2.0	0.5	0.5
	4"	6.4	1.6	1.51	5.4	1.4	1.3

Adapted from: [Chef Resources](#) | [Professional Chef Websites](#) | [Culinary & Chef Information](#)



Portion Accuracy Challenge: 1 Ounce Meatball



Equipment Essentials

[Insert slides here]



Nudging Nutrition (Behavioral Economic Techniques): Encouraging Healthy Food Choices in Schools



Product Placement

Display white milk in
the front of the cooler



Product Placement

Display whole fruit
in attractive bowls





Product Placement

Display fruit in at least two locations





Improve Taste and Quality

Offer

Offer sliced or cut fruit daily

Season

Season vegetables

Pair

Pair cut, raw veggies with a dip like hummus

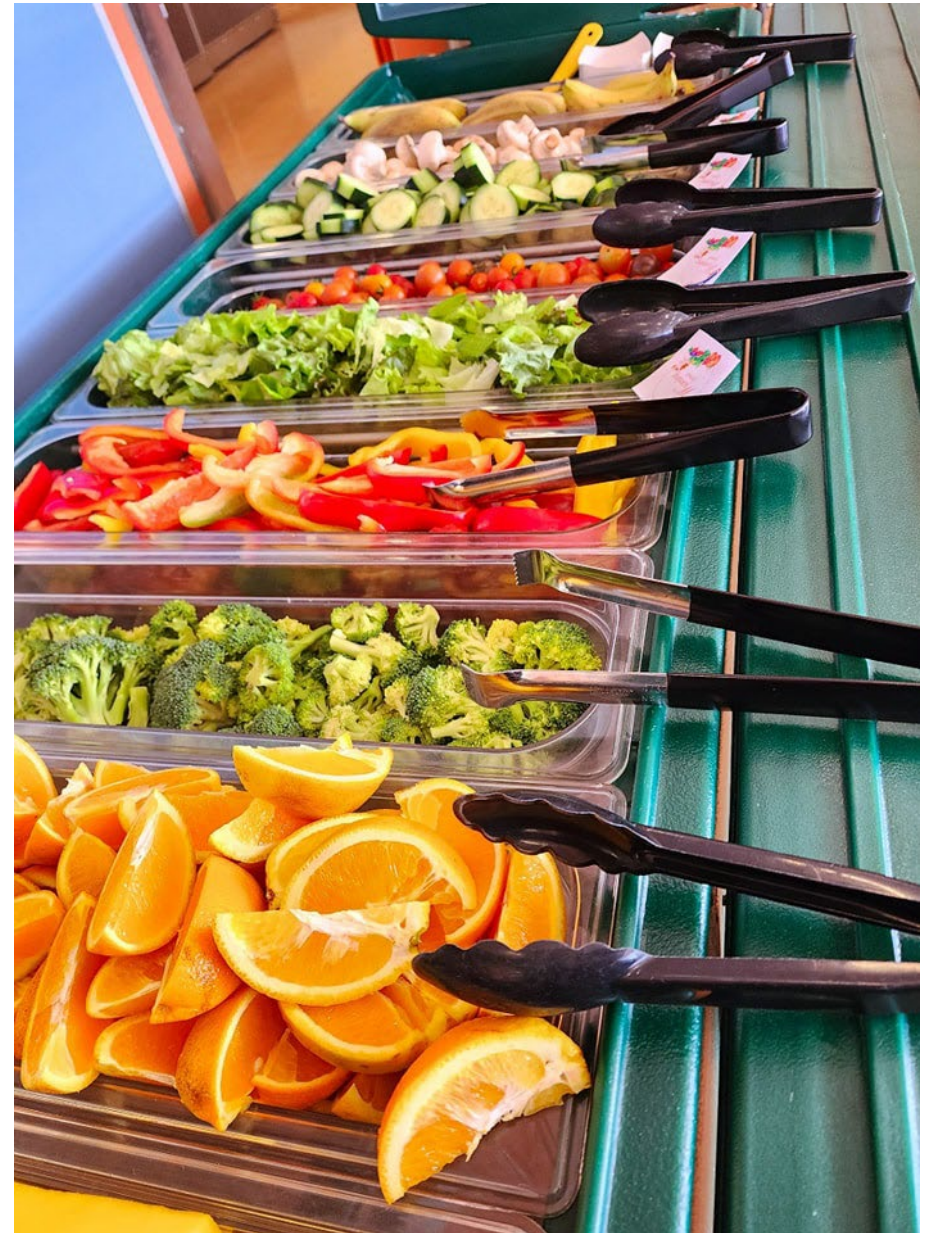
Prepare

Prepare vegetables in batches



Increase Variety

- More satisfied when they can choose!
 - *When kids were given a choice between carrots and celery, ATE 91% of the vegetables taken vs. 69% when carrots alone were offered*



Write an Appealing Menu

Printed
Menu

Menu
Board

Social
Media
Menus



Tuesday



Chili, Crackers
Cinnamon Roll
OR
Chicken Salad
Sandwich
Spicy Sweet Doritos

Thursday



Chicken Drumstick,
Dinner Roll
Mashed Potatoes &
Gravy
OR
Italian Combo Wrap

Wednesday



Fiestada Pizza
OR
Spicy Sweet Doritos
Mozz String Cheese

Friday



Cheese Ripper,
Marinara
PB&J Sandwich
OR
Mozz String Cheese



January 2019

Elementary Lunch

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	1 HAPPY NEW YEAR No School	2 - Hot Dog w/ Bun - Baked Beans - Salad Bar - Assorted Fresh Fruit - Milk Variety	3 - Chicken Salad on Bun - Carrot Sticks - Assorted Fresh Fruit - Salad Bar - Milk Variety	4 - Stuffed Crust Pizza - Boiled Broccoli - Salad Bar - Assorted Fresh Fruit - Milk Variety
7 - Cinnamon French Toast - Potato Smiles - Assorted Fresh Fruit - Milk Variety	8 - Beef Taco Meal w/ Tortilla Rounds - Salsa - Assorted Fresh Fruit - Salad Bar - Milk Variety	9 - Ham & Cheese Wrap - Dill Pickles - Salad Bar - Assorted Fresh Fruit - Milk Variety	10 - Chicken Patty on Bun - Boiled Carrots - Salad Bar - Assorted Fresh Fruit - Milk Variety	11 - Cheese Pizza 4X6 - Boiled Broccoli - Assorted Fresh Fruit - Salad Bar - Milk Variety
14 - Fish Sticks, Alaska Pollock - Breaded Mozzarella Cheesesticks - Peas - Assorted Fresh Fruit - Milk Variety	15 - Beef Taco Meal w/ Tortilla Rounds - Salsa - Kidney Beans - Assorted Fresh Fruit - Salad Bar - Milk Variety	16 - Egg, Cheese, Bacon on Bun - Sweet Potato Bites - Salad Bar - Assorted Fresh Fruit - Milk Variety	17 - Chicken Parmesan on Bun - Green Beans - Salad Bar - Assorted Fresh Fruit - Milk Variety	18 - The Max Round 5" Pizza - Boiled Broccoli - Assorted Fresh Fruit - Salad Bar - Milk Variety
21 MLK DAY No School	22 - Beef Taco Meal w/ Tortilla Rounds - Salsa - Kidney Beans - Assorted Fresh Fruit - Salad Bar - Milk Variety	23 - Turkey & Cheese on Bun - Carrot Sticks - Salad Bar - Assorted Fresh Fruit - Milk Variety	24 - Chicken Alfredo - Dinner Roll WG - Green Beans - Salad Bar - Milk Variety	25 - TONY'S 51% WG Bacon Scramble Pizza - Boiled Broccoli - Assorted Fresh Fruit - Salad Bar - Milk Variety
28 - Cheeseburger on Bun - Baked Beans - Assorted Fresh Fruit - Milk Variety	29 - Beef Taco Meal w/ Tortilla Rounds - Salsa - Assorted Fresh Fruit - Salad Bar - Milk Variety	30 - Pancake & Sausage Stick - Potato Smiles - Assorted Fruit Juice - Salad Bar - Milk Variety	31 - Popcorn Chicken - Mashed Potatoes - Corn - Salad Bar - Assorted Fresh Fruit - Milk Variety	

What Makes a Lunch?
Select 3-5 Components

MILK	GRAIN	VEGETABLE
FRUIT	PROTEIN	

One must be a

FRUIT	OK	VEGGIE
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Boiled Carrots

Boiled Broccoli

Kidney Beans

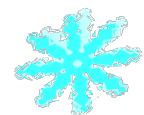
Write an Appealing Menu

K-5 grade students like imaginative, playful names

- X-ray carrots
- Crazy carrot sticks
- Rainbow veggie pizza
- Sweet talking sweet potatoes

6-12 grade students like descriptive, sensory words

- Spiced butternut squash
- Fluffy mashed potatoes
- Warm baked apples



6-8 Menu with Smarter Lunchroom Names



Monday	Tuesday	Wednesday	Thursday	Friday
Oven Baked Chicken Colorful Curried Rice Bright Green Broccoli Mandarin Oranges Apple Crisp Milk Choice	Sloppy Joe on a Bun Crunchy Carrots and Celery with Creamy Hummus Dip Fresh Green Grapes Baked Chips** Milk Choice	Loaded Pork Tacos Fiesta Refried Beans Golden Corn Sliced Pears Chocolate Pudding** Milk Choice	Savory Spaghetti & Meat Sauce Breadstick Crisp Romaine Salad Sliced Peaches Milk Choice	Sweet and Sour Chicken and Rice Bowl Asian Medley Vegetables Apple Slices Strawberry Cup Milk Choice
Philly Chicken Sub Crunchy Carrot Sticks with Dip French Fries Fresh Melon Cup Milk Choice	Cheesy Omelet with Salsa Harvest Apple Muffin Tasty Sweet Potato Tots Canned Pears Milk Choice	Chicken Nuggets Creamy Butternutty Mac & Cheese Garden Fresh Salad Canned Peaches Milk Choice	Hamburger on a Bun Tangy Apple Cranberry Coleslaw Cowboy Beans Toasted Potato Wedges Fruit Cocktail Milk Choice	Scrumptious Stromboli with Marinara Sauce Great Green Beans Citrus Fruit Cup Oatmeal Cookie Milk Choice
Toasted Cheese Sandwich Mouth-Watering Minestrone Soup Oven Roasted Potato Wedges Pineapple Chunks Milk Choice	Creamy Chicken Alfredo Vibrant Green Peas Cherr-ific Salad Vanilla Apples with Raisins Milk Choice	Turkey and Cheese Sub Sweet Cinnamon Squash Crunchy Carrot Sticks and Dip Canned Peaches Baked Chips** Milk Choice	Pizza Sticks with Marinara Sauce Italian Bean Salad Razy Cran-Grape Gelatin with Whipped Topping Milk Choice	Hearty Chicken Pot Pie Go-Pack-Go Broccoli Strawberries and Bananas Clementine Milk Choice

Notes:

** Indicates an "extra" item that does not contribute to the meal pattern

All grains are whole grain rich.

Milk Choice includes:

1% White
 Skim White
 Skim Chocolate





Use Positive Communication



GREETING



SERVING



CASH
REGISTER



SPECIAL
REQUESTS



CONFLICT

Use Suggestive Selling

- Attitudes are contagious!
- Signs and verbal prompts influence us to see and desire products
- Peer pressure

**Fruit comes
with your meal!**

**Take an apple
for later!**

**Would you like
some salad
with that pizza?**

**Try today's
special! It's
delicious!**



Maintain a Pleasant Environment

Attractive dining room

Branded dining room

Easy to read menu board

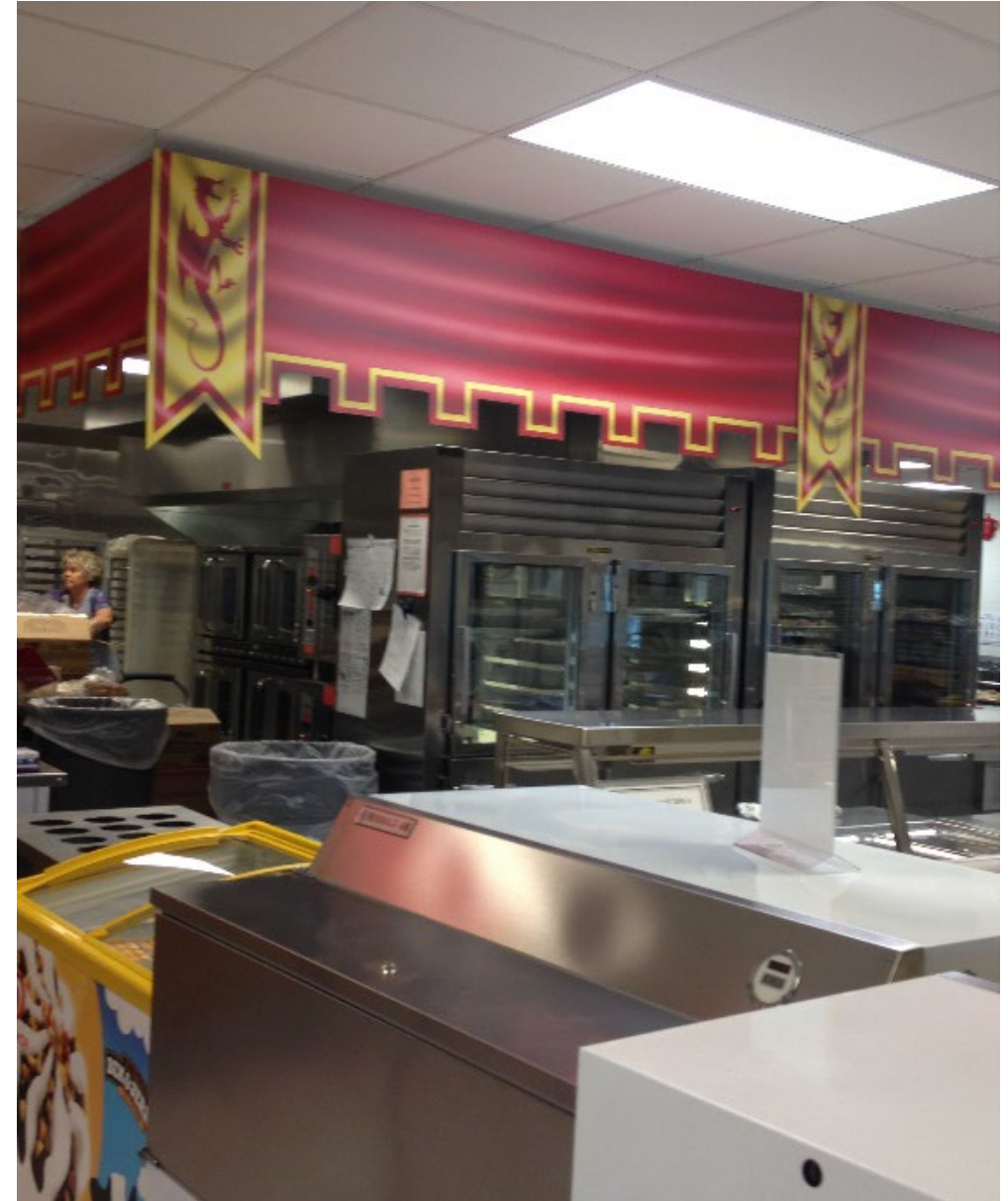
Cleaning supplies not visible during service

Recycling/trash bins are away from dining students

Warrick County School Corporation (Indiana)



Warrick County School Corporation (Indiana)



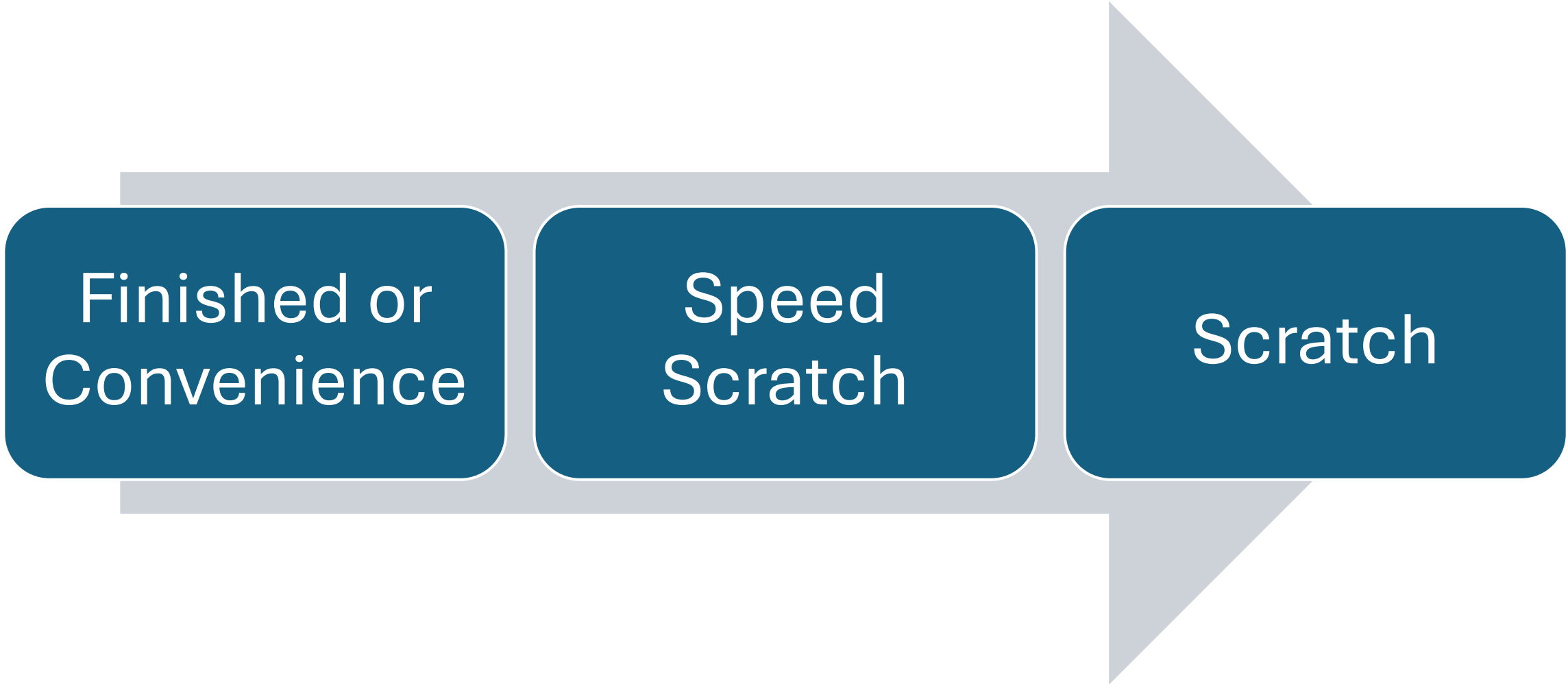


Ingredient Versatility & Speed Scratch in School Meals

Day Two



Types of Meal Preparation



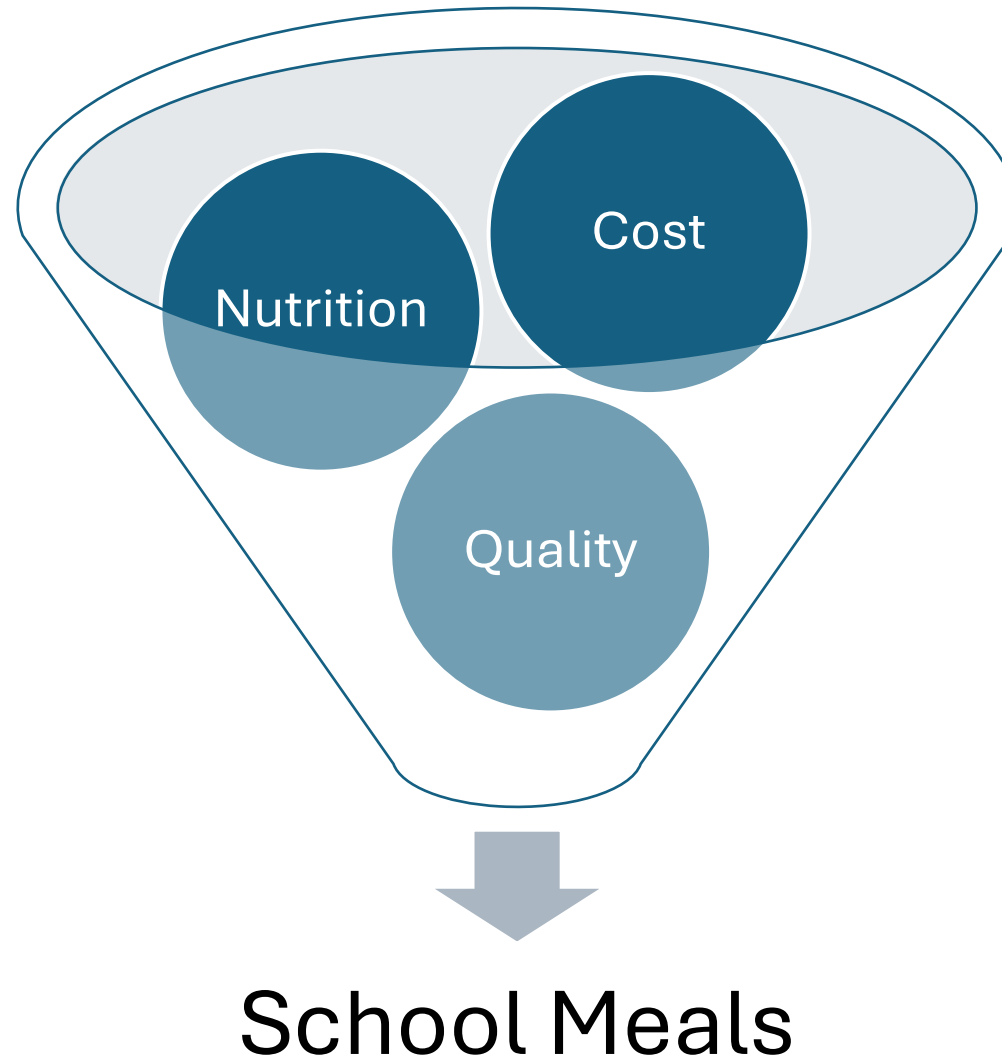
Finished or
Convenience

Speed
Scratch

Scratch

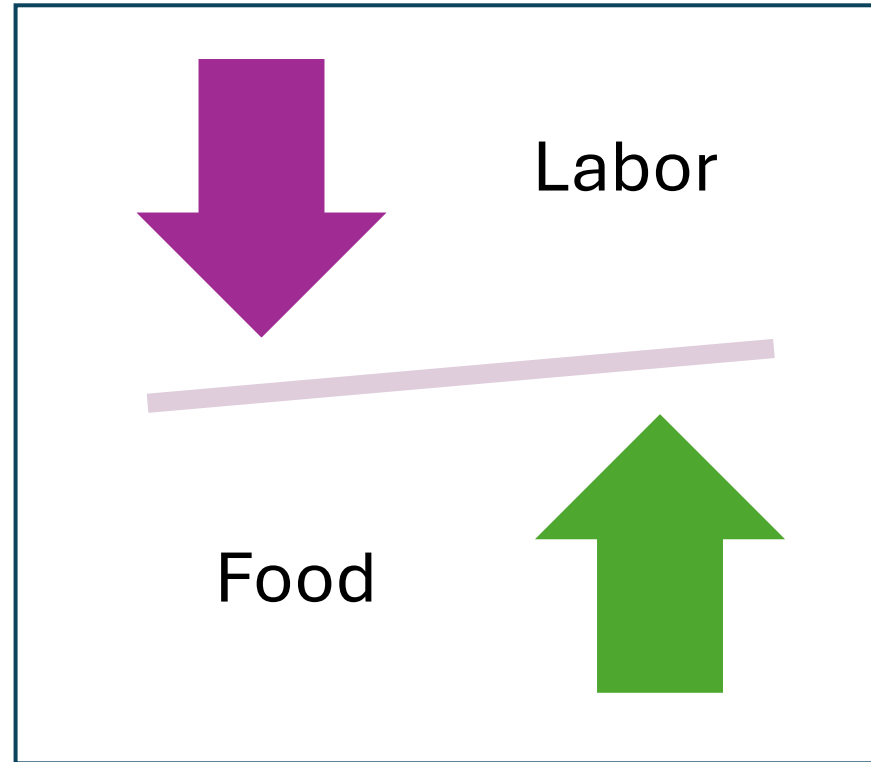
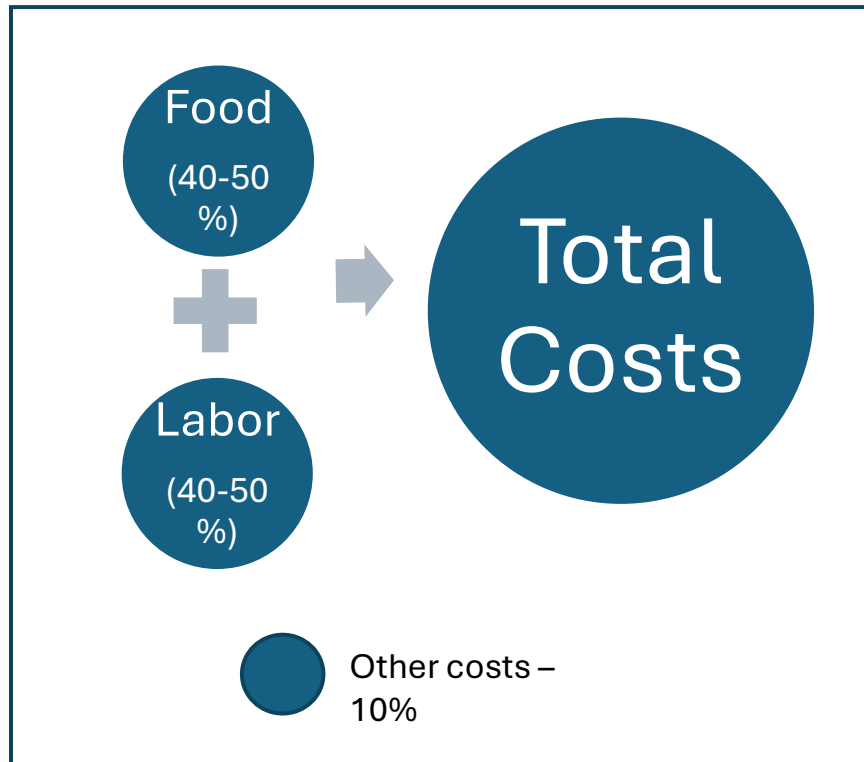


Scratch or Convenience?





The Economics of School Food Operations





Sodium



Quality





Scratch Cooking

Uses all
ingredients in
the most
basic form

ALL cooking
and assembly
takes place
on site



Advantages of Scratch Cooking

Ingredient control

Provides
maximum variety
and creativity in
meal preparation

Control
ingredients based
on nutrition
concerns

Fewer additives
and preservatives

Usually less
waste in
packaging

Uses quality fresh
ingredients

Lower ingredient
costs

Increased sales

Flexibility with
addressing allergy
concerns



Disadvantages of Scratch Cooking

Increases
planning time

Increased labor

Requires more
skill





Finished or Convenience Cooking

Heat
and
serve





Advantages of Finished or Convenience

Convenient

Time saving

Energy saving

Fear of cooking
success is
minimized





Disadvantages of Finished or Convenience

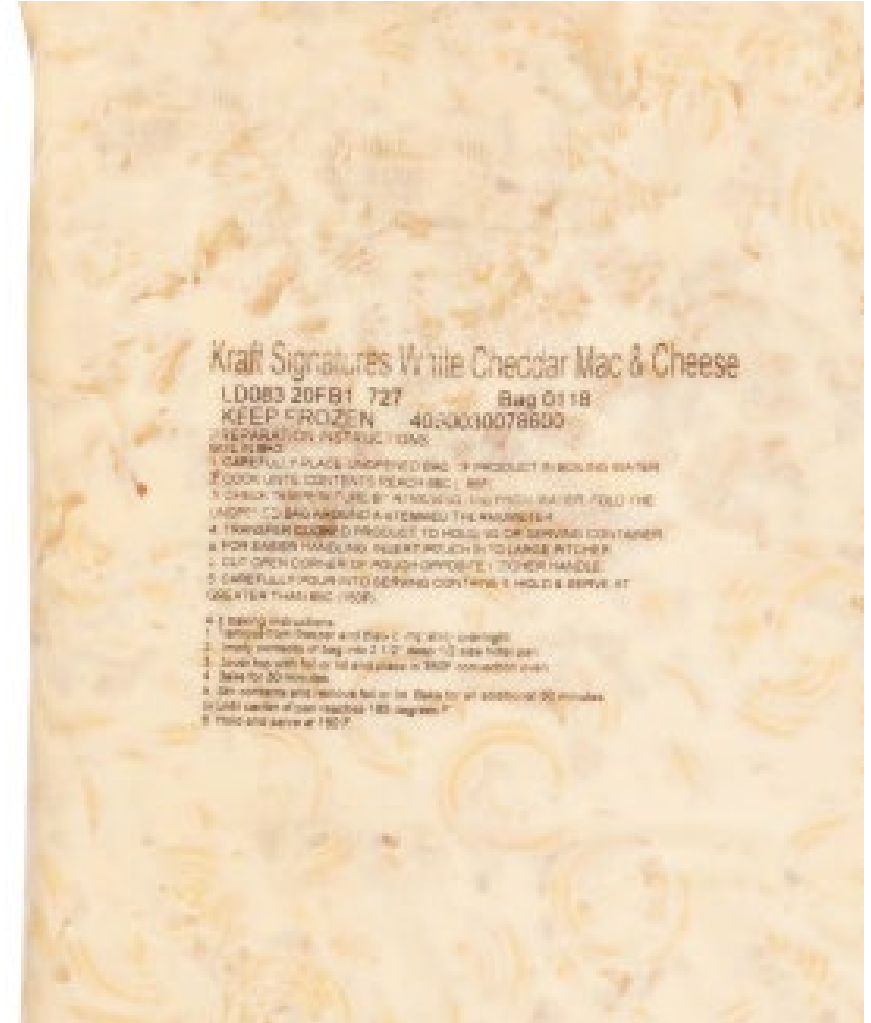
More expensive than the other meal preparation strategies

Highest sodium/fat content than the other meal preparation strategies

Flavor and appearance may not compare as well as the other meal preparation strategies

More additives and preservatives than all other meal preparation strategies

More packaging than the other meal preparation strategies





Speed Scratch

Uses value-added or minimally prepared ingredients

MOST assembly takes place on site





Advantages of Speed Scratch

Saves time and energy by providing short cuts

Adds variety and creativity to recipes

Usually less expensive than convenience foods

Easier for inexperienced cooks to prepare

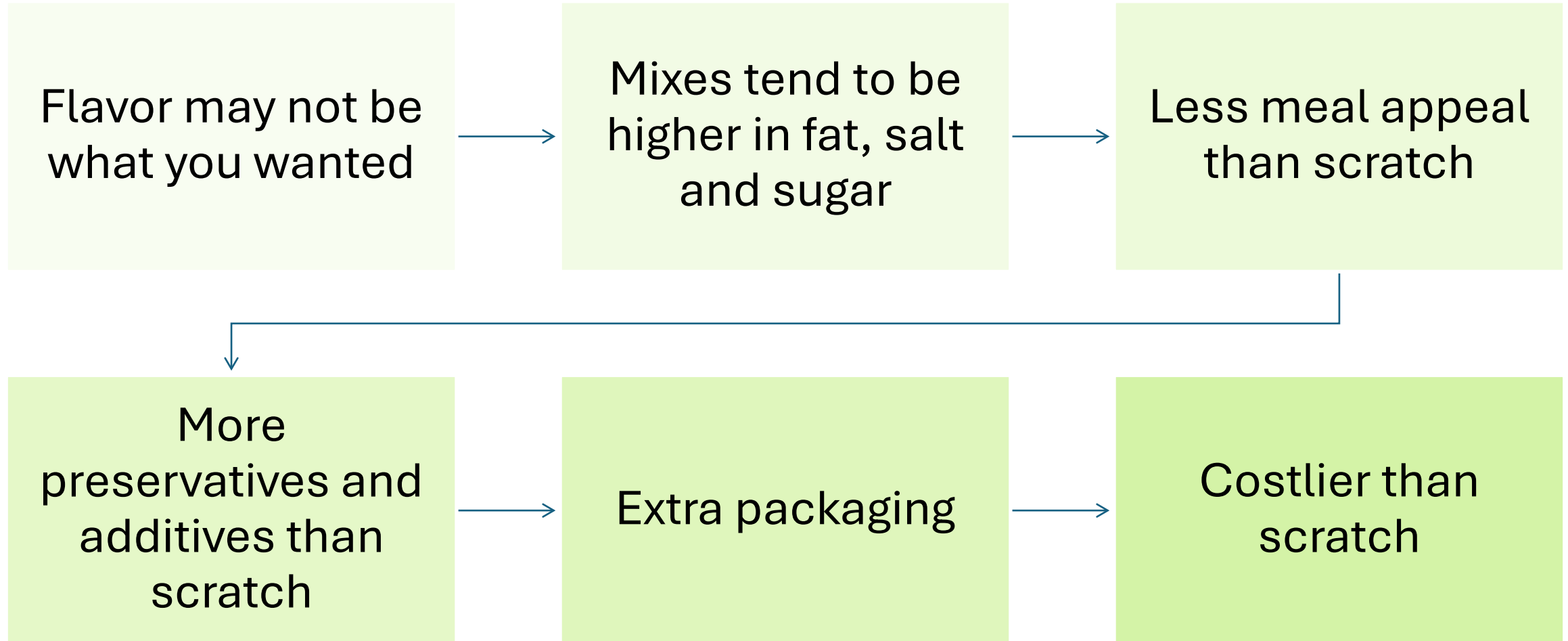
Uses resources of food companies to improve ingredients

Consistent product

Less waste



Disadvantages of Speed Scratch





Sodium in Spaghetti Sauce

Spaghetti sauce	Sodium in ½ cup
Classico	350 mg
Prego	420 mg
Ragu	530 mg
Hunts	610 mg
Made on-site	40 mg



Reducing Inventory

Control Costs



Streamline
Inventory
Management



Reduce Waste



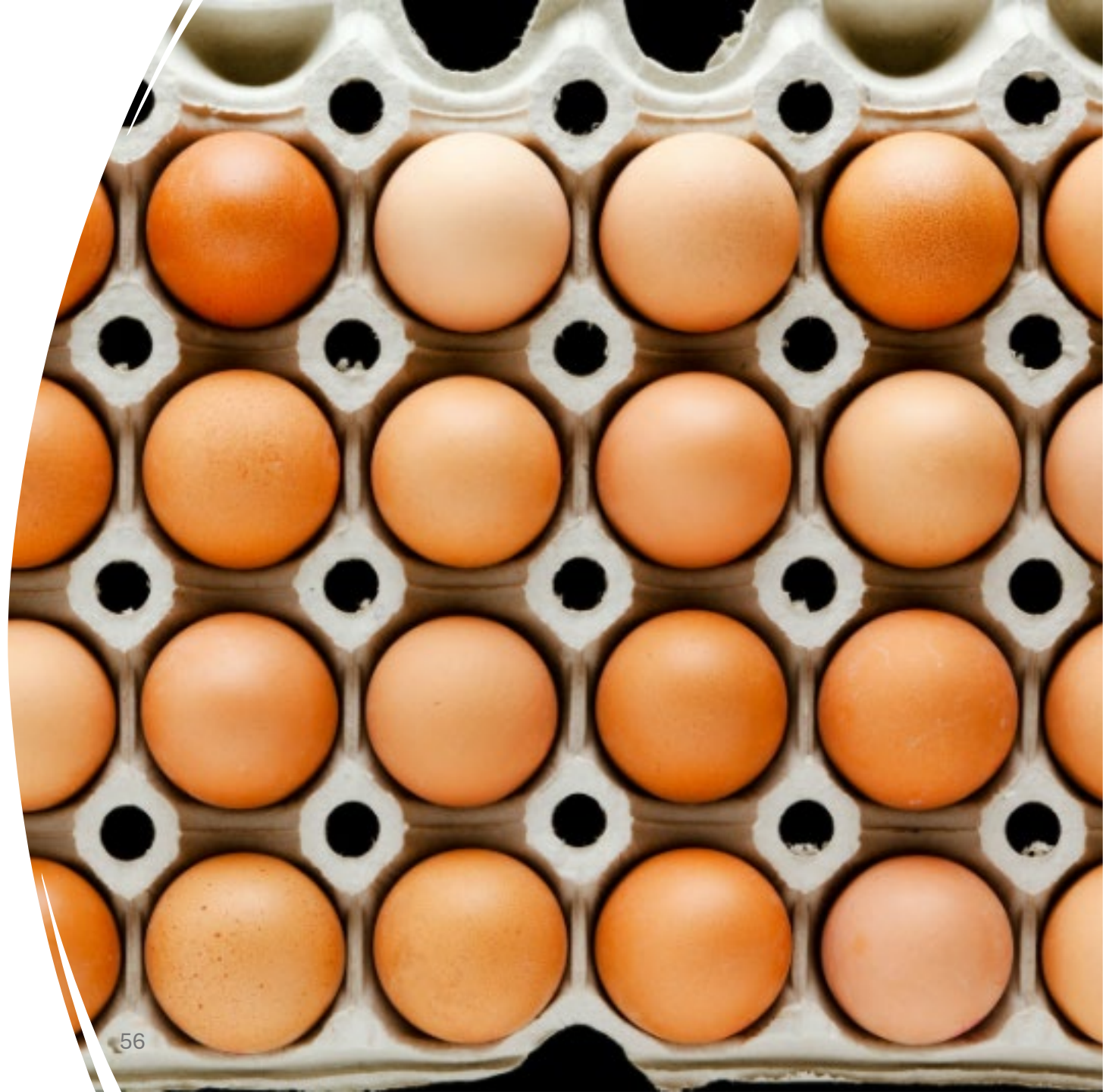


Core Ingredients

Whole ingredients

Less processed

No seasonings





Core.....and more!

Menu item flexibility

Customizable menu items

Increase global flavors

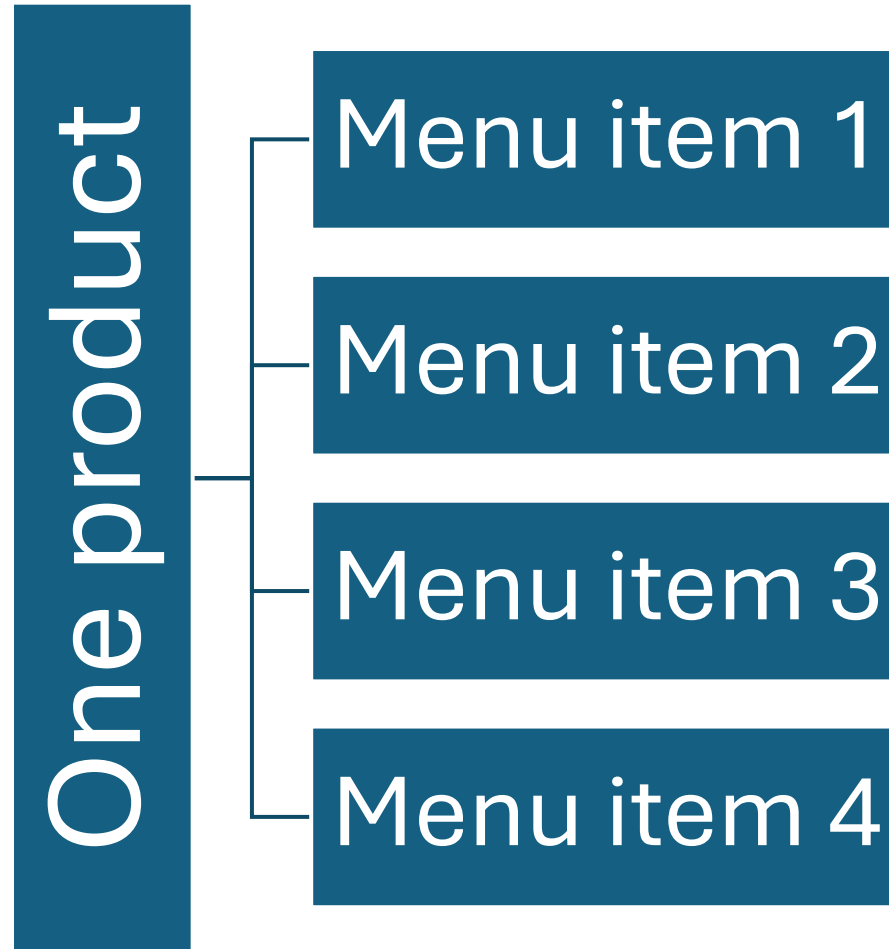
Work across grade levels





Minimize SKUs:

Maximize Menus ***Cross-Utilization***



Cross-Utilization: Chicken Breast

Chicken Breast

Shredded chicken

Diced chicken

Chicken strips

Chicken tenders

Whole chicken
breast





Cross-Utilization: **Shredded Chicken**



Shredded Chicken



Chicken Chili



Pulled Chicken Taco



BBQ Pulled Chicken



Chicken Noodle Soup



Chicken Tetrazzini



Cross-Utilization: **Diced Chicken**



Diced Chicken



Chicken Pot Pie



Buffalo Chicken Tot Bake



Italian Chicken with Oregano and Lemon



Kung Pao Chicken with Sweet Peppers



Caribbean Chicken Sub



Cross-Utilization: **Chicken Strips**



Chicken Strips



Chicken Fajita
Rice Bowl



Chicken Stir-fry



Cheesy Chicken Fajitas



Chicken Teriyaki



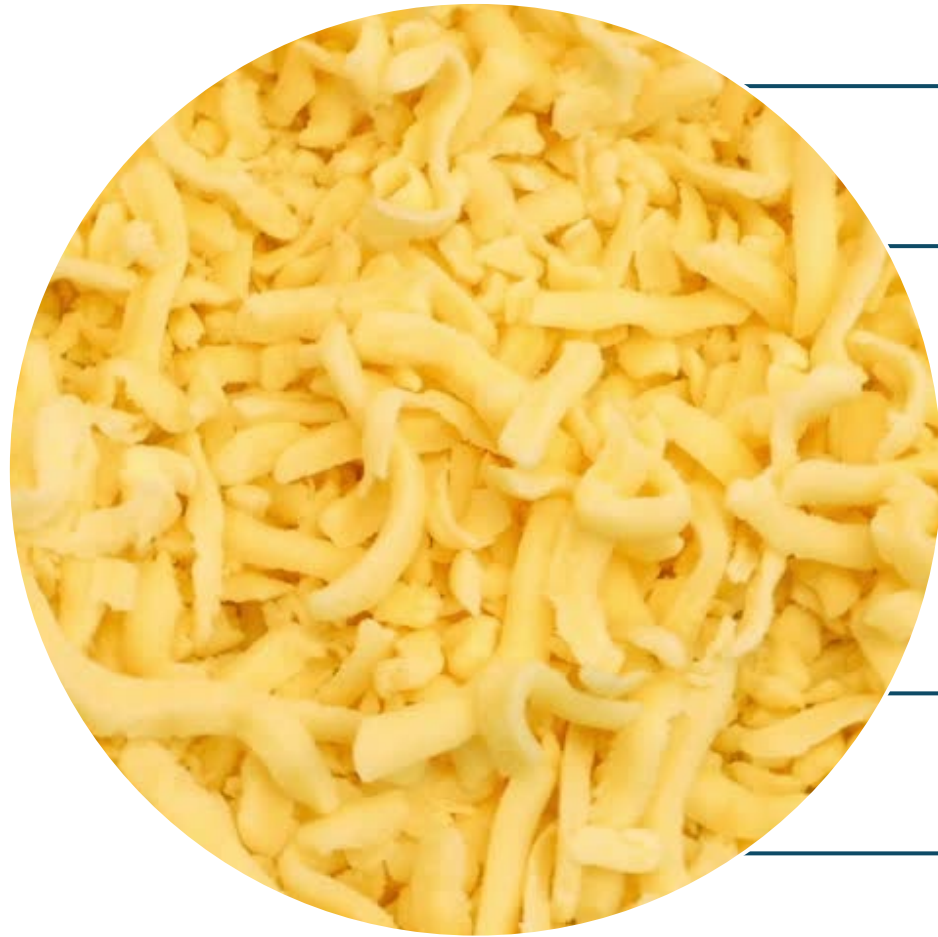
Chicken Curry
Casserole

Enhance the Menu with Cross-Utilization

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Bean and Rice Burrito WG Tortilla Scoops** Deluxe Refried Bean Dip** Whole Kernel Corn Fresh Kiwi Halves Canned Peaches** Choice of Milk	Homestyle Spaghetti with Meat Sauce WW Sliced Bread** Build Your Own Side Salad Chilled Canned Pears Choice of Milk	Loaded Turkey Sub Chunky Chicken Noodle Soup Build Your Own Side Salad Assorted Fresh Melon Bowl Choice of Milk	Beef Shepherd's Pie Fresh-Baked WW Breadstick Steamed Broccoli Purple Grapes Baked Apples WW Sugar Cookie* Choice of Milk	Chicken Patty Sandwich Baked Beans Oven Roasted Potato Wedges Juicy Pineapple Tidbits Orange Juice Cup** Choice of Milk
Toasted Cheese Sandwich Creamy Tomato Soup Vibrant Green Peas Banana Apple Crisp Choice of Milk	Fiesta Chicken Fajitas Aztec Grain Salad* Refried Beans Shelled Edamame Purple Grapes Choice of Milk	Homestyle Chili w/ WG Cornbread Savory WW Crackers Crisp Romaine Salad with Chickpeas** Fresh Pear Pineapple Chunks** Choice of Milk	Turkey & Dressing Supreme Fresh-Baked WW Dinner Roll Two Potato Mash Carrot Sticks Dried Wisconsin Cranberries Orange Juice Cup** Choice of Milk	Chicken Nuggets Homestyle WW Biscuit Three Bean Salad Fresh Broccoli Spears Mandarin Oranges Choice of Milk
French Toast Sticks w/Maple Syrup Baked Sweet Potatoes & Apples Fresh Celery Sticks Orange Wedges Choice of Milk	Hot Ham, Broccoli, & Cheese Pita Crispy Veggie Dippers w/Ranch Fresh Kiwi Halves Banana** Choice of Milk	Honey Mustard Deli Wrap Macaroni & Cheese Baked Beans Fresh Jicama Pineapple Chunks Choice of Milk	Roasted Turkey w/Gravy WW Dinner Roll* Mediterranean Quinoa Salad Fresh Romaine Salad Carrots ** Applesauce Cup Choice of Milk	Pizza Sticks w/ Marinara Dipping Sauce Oven Roasted Potato Wedges Assorted Fresh Melon Bowl Choice of Milk
Hearty Spanish Stew w/Cheddar Topping** Fresh Baked WW Breadstick Crisp Vegetables w/Ranch Baked Apples Purple Grapes Choice of Milk	Black Bean Quesadilla Steamed Corn Refried Beans Chilled Canned Pears Choice of Milk	Country Smoked Turkey and Bean Soup w/Cheddar Topping Build Your Own Side Salad WW Cinnamon Roll WW Dinner Roll* Juicy Pineapple Tidbits Choice of Milk	All-American Chicken Wrap Build Your Own Side Salad Fresh Celery Sticks w/Peanut Butter** Assorted Fresh Melon Bowl Choice of Milk	Flame-Broiled Cheeseburger Sweet Potato Tots Baked Beans Fresh Mixed Fruit Cup Choice of Milk
Deluxe Taco Pie WG Cornbread Whole Kernel Corn Sweet Potato Sticks Fresh Kiwi Choice of Milk	Hearty Beef Stew w/Cheddar Topping Fresh-Baked WW Dinner Roll Crisp Broccoli w/Hummus Green Grapes Pumpkin Bar Choice of Milk	Fish Tacos Cilantro-Lime Rice Roasted Squash Cucumber Slices** Grapefruit Choice of Milk	Greek Chicken Salad WW Breadsticks Confetti Soup Green Pepper Slices** w/Cucumber Dipping Sauce** Orange Choice of Milk	Turkey Corn Puppies Oodles of Noodles** Harvest Glazed Carrots Sugar Snap Peas Peaches Canned Apricots** Choice of Milk



Cross-Utilization: Cheese



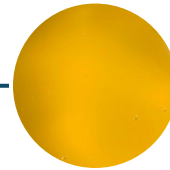
Cheese



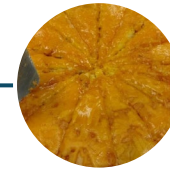
Chicken Taco



Broccoli Mac and Cheese



Nacho Cheese Sauce



Beef Tamale Pie



Three Sisters Enchiladas



Cross-Utilization: **Beef Crumbles**



Beef Crumbles



Chili



Beef Shepherd's Pie



Spaghetti and Meat Sauce



Beef Tamale Pie



Spy Thai Beef



Cross-Utilization: **Diced Tomatoes**



Diced Tomatoes



Chili



Salsa



Spaghetti Sauce



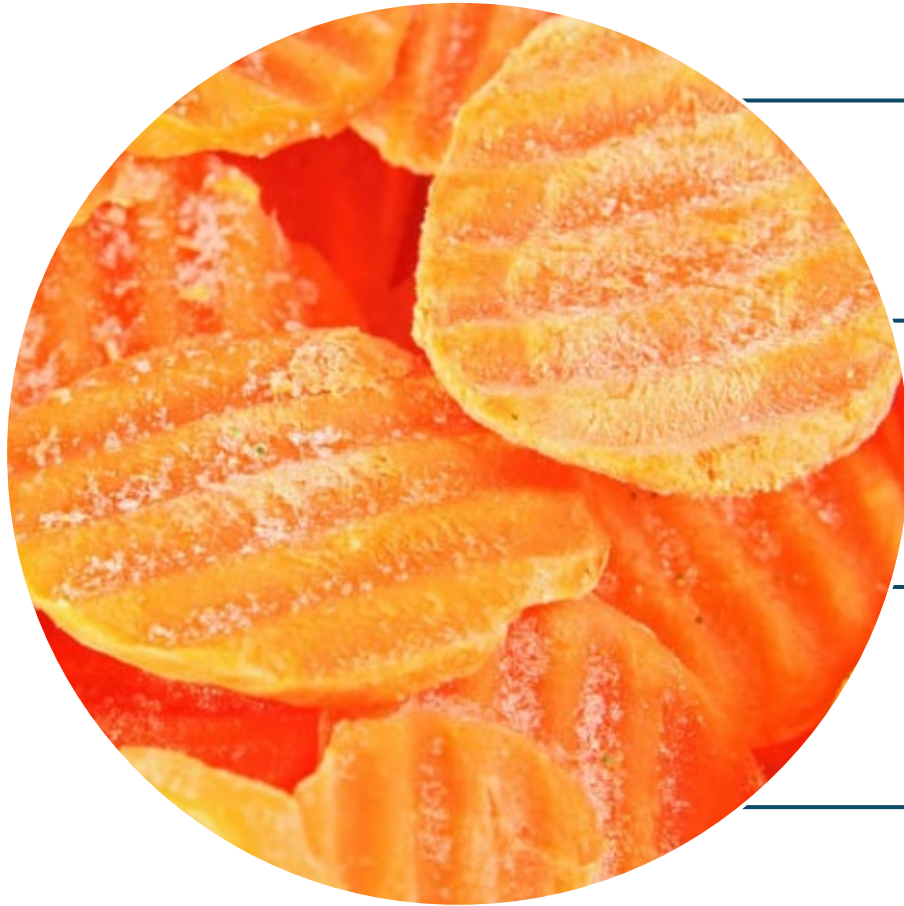
Beef Tamale Pie



Enchilada Sauce



Cross-Utilization: **Frozen Carrots**



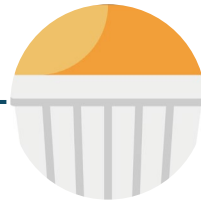
Frozen Carrots



Roasted Carrots



Honey Carrot Coins



Burke County Carrot Souffle



Carrot & Quinoa Muffins



Cross-Utilization: **Frozen Broccoli**



Frozen Broccoli



Cumin Roasted
Broccoli



Creamy Broccoli Soup



Lemon Zest Broccoli



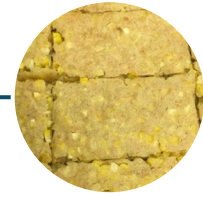
Broccoli Mac & Cheese



Cross-Utilization: **Frozen Corn**



Frozen Corn



Corn Pudding



Mexicali Corn



Corn Chowder with Thyme



Corn & Sorghum Salad

Utilizing Local Foods

[NY Ag to provide content here and lead discussion]



Flavor Enhancers: Herbs, Spices, Culinary Acids

Day Three

Taste / Flavor

Most important factor
influencing food choice

American palate has grown
bolder

Flavor and healthful
cooking are bound together



It Makes “Sense”

Taste

Smell

Touch

Sight

Sound



The “Tastes”



Sweet

- Innate preference for sweet from birth – endorphins
- **Mellows** acidic and bitter tastes
- *Sources: sugars, sugar alcohols, alternative sweeteners*



Salty

- Preference strongly influenced by environmental factors – from 4 to 6 months, innate
- **Enhances** flavor, **counteracts** bitterness, **accentuates** sweetness
- *Source: salt*



Sour

- Proved bright, sharp flavors
- **Reduces** saltiness, **balances** spiciness
- *Source: acidic ingredients, citrus, vinegars*



Bitter

- Taste for bitterness helps people sense natural toxins
- **Provides** complexity, depth
- *Sources: quinine, dark chocolate, beer, coffee, grapefruit juice, zests*

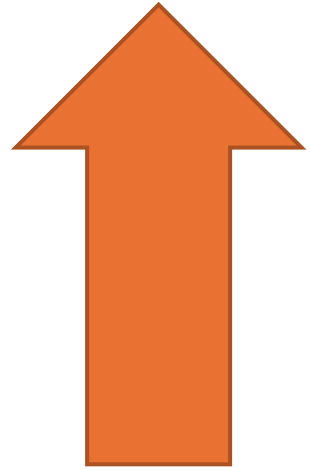


Umami

- Japanese for “delicious”. Described as savory, brothy or meaty
- *Sources: meat, cheese, tomatoes, mushrooms, seaweed, MSG, miso and fermented products*



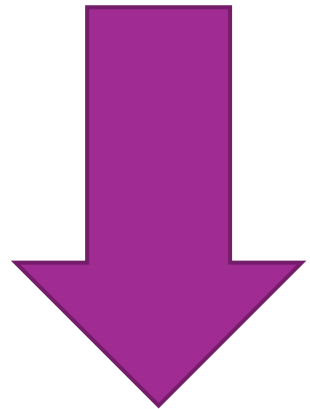
Children's Taste Preference



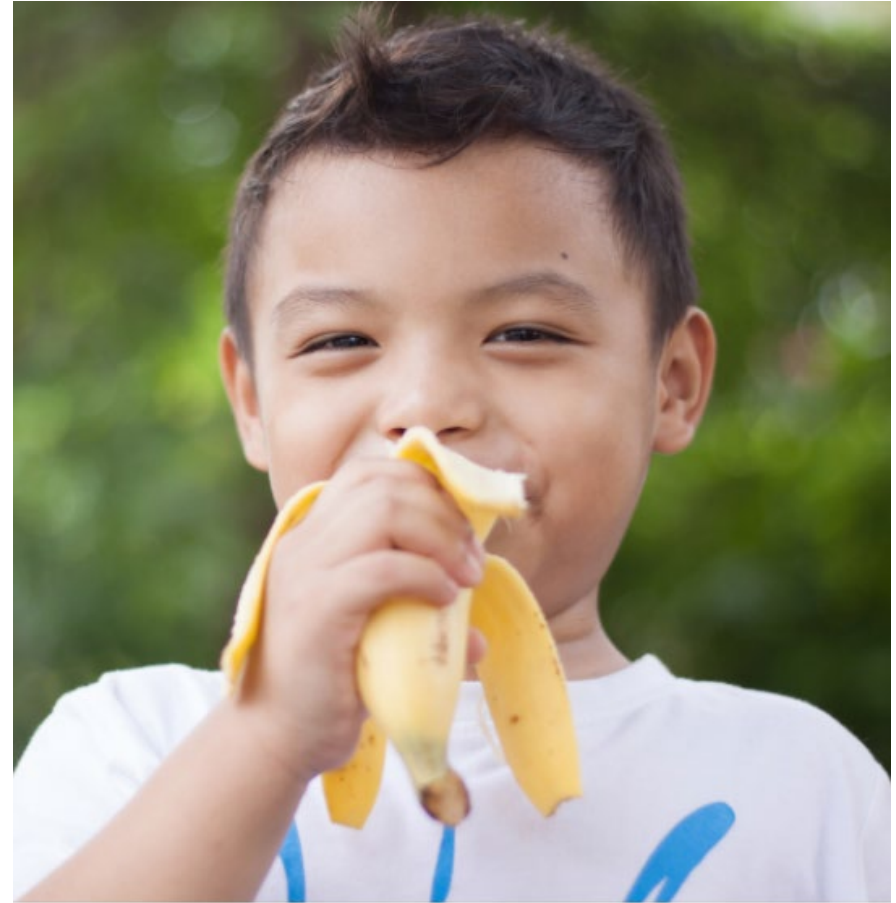
Sweet

Salty

Sour



Bitter





Smell

10,000 times more sensitive than our sense of taste.



Touch - Mouthfeel

Temperature

- Cold suppresses sweetness
- Bitterness is more intense with a cold solution
- Sourness is more tense with a warm solution

Chemethesis

- Burn of chilis
- Cool of mint
- Sting from carbonation

Texture: give us insight into the “taste of food”

- Velvet smoothness of mousse
- Crunch crust of bread
- Snap of a sugar snap pea





Sight

Colors



Shapes



Consistency



Moisture





Sound

Crunch



Crackle



Sizzle



Squeaky



Carbonation





Jelly Bean Sensory Evaluation Challenge





What's Up With Sodium?





Salt or Sodium



Sodium chloride is the chemical name for salt



Salt is 40% sodium and 60% chloride



Most of the sodium we consume is in the form of salt





The Problem with Too Much Sodium

Too much sodium is the leading risk factor for **high blood pressure**

High blood pressure is the major risk factor for heart disease and stroke, both are leading causes of death in the U.S.

Majority of persons in the U.S. exceed current recommendations for sodium, partly due to consumption of highly processed and prepared/restaurant foods



Sources of Sodium in Our Diet

- The salt shaker is not the blame!
 - More than 75% of the sodium Americans consume comes from restaurant, prepackaged, and processed foods
 - Only about 5% of dietary sodium is added during home cooking and only about 6% is added at the table
 - The remaining 12% of dietary sodium occurs naturally in foods
- Surprising sources of sodium:
 - Lots of packaged and processed foods
 - Breads and rolls, cold cuts/cured meats, and pizza

Food	Sodium Range (in milligrams)
1 slice white bread	80 - 230
3 oz turkey breast, deli or pre-packaged luncheon meat	450 - 1,050
4 oz slice frozen pizza, plain cheese, regular crust	370 - 730
4 oz slice restaurant pizza, plain cheese, regular crust	510 - 760
4 oz boneless, skinless chicken breast, fresh	40 - 330
3 oz chicken strips, restaurant, breaded	430 - 900
3 oz chicken nuggets, frozen, breaded	200 - 570
1 cup chicken noodle soup, canned prepared	100 - 940
1 corn dog, regular	350 - 620
1 cheeseburger, fast food restaurant	710 - 1,690
1 oz slice American cheese, processed (packaged or deli)	330 - 460
1 cup canned pasta with meat sauce	530 - 980
5 oz pork with barbecue sauce (packaged)	600 - 1,120
1 oz potato chips, plain	50 - 200



Sodium levels of the same food can vary widely, so choose wisely.

Source: www.cdc.gov



Sodium Intake Recommendations

The Dietary Guidelines for Americans recommend limiting sodium to less than **2,300** mg per day ages 14 and above

For children, the recommendations vary by age:

- **Ages 1 – 3:** less than 1,200 mg per day
- **Ages 4 – 8:** less than 1,500 mg per day
- **Ages 9 – 13:** less than 1,800 mg per day



Final Rule for Sodium in School Meals

Final Rule for Sodium in School Meals

Age/Grade Group	Current Sodium Limit: In place through June 30, 2027	Sodium Limit: Must be implemented by July 1, 2027 (approximate 15% reduction for lunch and approximate 10% reduction for breakfast from current limits)
School Breakfast Program		
K-5	≤ 540 mg	≤ 485 mg
6-8	≤ 600 mg	≤ 535 mg
9-12	≤ 640 mg	≤ 570 mg
National School Lunch Program		
K-5	≤ 1,110 mg	≤ 935 mg
6-8	≤ 1,225 mg	≤ 1,035 mg
9-12	≤ 1,280 mg	≤ 1,080 mg

Source: <https://www.fns.usda.gov/cn/school-nutrition-standards-updates/sodium>.

Limits apply to the average amount of sodium in lunch and breakfast menus offered during a school week.

Read Food Labels



Bosco's® Whole Grain Pizza
Stuffed Breadsticks

Nutrition Facts

72 Servings Per Container

Serving Size 107g

Amount Per Serving

Calories

250

Daily Value % *

Total Fat 9g 12%

Saturated Fat 4.5g 23%

Trans Fat 0g

Cholesterol 25mg 8%

Sodium 510mg 22%

Total Carbohydrate 30g 11%

Dietary Fiber 3g 11%

Total Sugars 3g

Includes 3g Added Sugars 6%

Protein 11g

Vitamin D MC 0%

Calcium mg 10%

Iron mg 10%

Potassium mg 4%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.



Sodium Labeling

Label term	Definition
Sodium free	Less than 5 mg per serving
Very low sodium	35 mg or less per serving
Low sodium	140 mg or less per serving
Reduced or Less sodium	At least 25 % less per serving than the reference food
Unsalted or no salt added	No salt added during processing; however, the product may still contain sodium



Soy Sauce

1 tablespoon = **960** mg sodium



Less Sodium Soy Sauce

1 tablespoon = **590** mg sodium

High-Sodium Ingredients

Ingredient	Function
Monosodium glutamate (MSG)	Flavor enhancer
Sodium benzoate	Preservative
Sodium caseinate	Thickener and binder
Sodium citrate	Buffer used to control acidity in soft drinks
Sodium nitrite	Curing agent in meat
Sodium phosphate	Emulsifier and stabilizer
Sodium propionate	Mold inhibitor
Sodium saccharin	Artificial sweetener

Which food has more sodium?

- One bagel
- Two slices of bacon

Answer:

- **One bagel (500mg)**
- Two slices of bacon (320 mg)





Which food has more sodium?

- Half can of tuna in water
- One slice of devil's food cake (from cake mix)

Answer:

- **One slice of devil's food cake (370 mg)**
- Half can of tuna in water (150 mg)





Which food has more sodium?

- Low-fat cottage cheese (1/2 cup)
- Yoplait light yogurt (6 oz)

Answer:

- **Low-fat cottage cheese (450 mg)**
- Yoplait light yogurt (85 mg)





Salt Math

1 teaspoon of table salt weighs 5.6 grams or 5600 mg

$5600 \text{ mg} \times 40\% \text{ (sodium)} = 2240 \text{ mg sodium}$

1 teaspoon of salt = 2240 mg of sodium





Using Salt

Table salt	50 portions	100 portions
1 teaspoon (2240 mg sodium)	45 mg per portion	23 mg per portion
1 tablespoon (6720 mg sodium)	135 mg	70 mg
2 tablespoons (13,440 mg sodium)	270 mg	135 mg



Comparing Salts

Salt	Amount	Weight	Sodium (mg)
Table salt	1 teaspoon	6 grams	2300
Diamond Crystal kosher salt	1 teaspoon	2.8 grams	1120
Diamond Crystal sea salt	1 teaspoon	5.6 grams	2160
Morton kosher salt	1 teaspoon	4.8 grams	1920
Morton sea salt	1 teaspoon	5.6 grams	2240
Diamond Crystal Salt Sense <i>Ingredients: salt, silicon dioxide, tricalcium phosphate, sodium bicarbonate, dextrose, potassium iodine</i>	1 teaspoon	4 grams	1560
Morton Salt Substitute <i>Ingredients: potassium chloride</i>	1 teaspoon	5 grams	No sodium



Types of Salt

Table salt

Kosher salt

Sea salt

Curing or brining salt

Himalayan pink salt

Hawaiian black salt

Smoked salt



Cut the Sodium in School Meals & Menus





Sodium Free Ingredients:

Citrus





Sodium Free Ingredients: Vinegars





Sodium Free Ingredients: **Herbs**





Sodium Free Ingredients: Spice Blends





Sodium Free Ingredients: Onions and Garlic



Essential Spices and Herbs

- Garlic, granulated
- Onion powder
- Cumin
- Paprika, sweet
- Paprika, smoked
- Chili powder
- Ginger, ground
- Pepper, black
- Pepper, red
- Rosemary
- Oregano
- Thyme





Spice	Sodium per 1 teaspoon
Garlic, granulated	0
Garlic salt	1960
Onion powder	0
Onion salt	1800
Black pepper	0
Paprika	0
Cumin	5



Make Your Own Spice Blend





SEASONINGS BLENDS

Yield: 1 quart

Mexican	Onion powder Garlic, granulated Paprika, smoked Cumin, ground Chili powder	1/3 cup 1/3 cup 1/3 cup 1 ¼ cup 1 ¾ cup
Buffalo	Onion powder Garlic, granulated Paprika Chili pepper Cayenne pepper	1 cup 1 ¼ cup ¼ cup 1 ¼ cup ¼ cup
Italian	Basil, dried Oregano, dried Marjoram, dried Thyme, dried	1 1/3 cup 1/3 cup 1 cup 1/3 cup
Caribbean Spice	Ginger, ground Black pepper, ground Orange peel, dried Mace, ground Cloves, ground Brown sugar	1 cup 1 cup ¾ cup 2 tablespoons 1 tablespoon 1 tablespoon 1 cup
Garlic & Herb	Onion, granulated Garlic, granulated Paprika Oregano leaves Thyme leaves	1/3 cup 2/3 cup 1 cup 1 cup 1 cup

Barbecue	Onion powder Garlic, granulated Paprika, smoked Cumin, ground Black pepper, ground	1 cup 1 cup ¾ cup 2 tablespoons ¾ cup 2 tablespoons ¼ cup
Ranch	Garlic, granulated Onion powder Dill weed Black pepper, ground	1 ¼ cup 1 ¼ cup 1 ¼ cup ¼ cup
Parmesan-Rosemary	Garlic, granulated Rosemary, crushed Parmesan cheese	½ cup ¾ cup 2 ¾ cups
Spice Rub	Onion powder Garlic, granulated Paprika Cumin, ground Chili powder Black pepper, ground Brown sugar	½ cup 2 tablespoons ½ cup 2 tablespoons ½ cup 2 tablespoons ½ cup 2 tablespoons ½ cup 2 tablespoons 2 tablespoons ¾ cup
Tandoori	Paprika Cumin, ground Coriander Cayenne pepper Ginger, ground Turmeric	2/3 cup 2/3 cup 2/3 cup 2/3 cup 2/3 cup 2/3 cup

ADDING SALT

Salt may be added to any of these **seasoning blends** as needed.

Using 1 teaspoon of salt for 50 servings adds about 45 mg of sodium per serving.

Using 1 tablespoon of salt for 100 servings adds about 70 mg of sodium per serving.



Seasoning Blends

Spice or Herb	Mexican	Buffalo	Italian	BBQ	Ranch	Tandoori
Garlic, granulated	1/3 cup	1 ¼ cup	1 cup	1 cup	1 ¼ cup	
Onion powder	1/3 cup	1 cup		1 cup	1 ¼ cup	
Cumin	1 ¼ cup			½ cup 2 tablespoons		2/3 cup
Paprika		¼ cup				2/3 cup
Paprika, smoked	1/3 cup			½ cup 2 tablespoons		
Chili powder	1 ¾ cup	1 ¼ cup				
Pepper, black				¼ cup	¼ cup	
Red pepper, ground		¼ cup				
Pepper, cayenne						2/3 cup
Ginger, ground						2/3 cup
Turmeric						2/3 cup
Basil, dried			1 1/3 cup			
Oregano, dried			1/3 cup			
Thyme, dried			1 cup			
Rosemary, dried			1/3 cup			
Dill weed, dried					1 ¼ cup	



Ranch

Garlic, granulated

Onion, granulated

Pepper, black

Dill



BBQ

Garlic, granulated

Onion, granulated

Pepper, black

Paprika, smoked

Cumin





Taco Seasoning

Garlic, granulated

Onion powder

Cumin

Paprika

Chili powder

Taco seasoning	Sodium in 2 teaspoons
Regular	560 mg
Low-sodium	220 mg
Made on-site	15 mg



Regular Taco Seasoning

280 mg sodium per teaspoon



Nutrition Facts
6 servings per container
Serving size 1 tsp (4g)
Amount per serving
Calories 15
% Daily Value*

Total Fat	0g	0%
Saturated Fat	0g	0%
Trans Fat	0g	
Cholesterol	0mg	0%
Sodium	280mg	12%
Total Carbohydrate	2g	1%
Dietary Fiber	0g	0%
Total Sugars	less than 1g	
Includes 0g Added Sugars		0%
Protein	0g	
Vitamin D	0mcg	0%
Calcium	0mg	0%
Iron	0.4mg	2%
Potassium	0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Ingredients: Salt, Spice, Garlic Powder, Sugar, Corn Starch, Onion Powder, Chili Pepper, Red Bell Pepper, Paprika, Onion. Contains 2% or less of: Garlic, Vegetable Oil (canola, soybean and/or sunflower oil), Silicon Dioxide (anticaking agent), Natural Flavor, Extractives of Paprika (color). *Dried

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Learn more at Ask.GeneralMills.com

Try Our Other Varieties!
visit us at www.OLDPASO.com
For food safety and quality, follow the cooking directions.
Directions
You Will Need: 1 Lb Boneless Skinless Chicken Breasts, 1 Tbsp Vegetable Oil, ¼ Cup Water, 1 Pkt Taco Seasoning Mix
1. Cut chicken into thin strips. Heat oil in 10-inch skillet over **medium-high** heat. Add chicken; cook and stir until no longer pink.
2. Stir in water and seasoning mix. Heat to boiling.
3. Reduce heat; simmer uncovered **3 to 4 minutes**, stirring often, until thickened. Use as taco filling. Refrigerate leftovers.

QUESTIONS OR COMMENTS?
Call 1-800-300-8664 Mon - Fri 7:30 a.m. - 5:30 p.m. CT
Information from the package will be helpful. Old El Paso Consumer Services, P.O. Box 200, Minneapolis, MN 55440
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Ingredients: Salt, spice, garlic powder, corn starch, onion powder, chili pepper, red bell pepper, paprika, onion.....

Less Sodium Taco Seasoning

110 mg sodium per teaspoon



Nutrition Facts
About 6 servings per container
Serving size 2 Tsp (5g)
Amount per serving
Calories 15
% Daily Value*

Total Fat	0g	0%
Saturated Fat	0g	0%
Trans Fat	0g	
Cholesterol	0mg	0%
Sodium	220mg	10%
Total Carbohydrate	3g	1%
Dietary Fiber	less than 1g	2%
Total Sugars	0g	
Includes 0g Added Sugars		0%
Protein	0g	
Iron	0.4mg	2%

Not a significant source of vitamin D, calcium, and potassium.
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Ingredients: Corn Starch, Maltodextrin, Chili Pepper, Onion Powder, Salt, Spice, Sea Salt (potassium magnesium chloride, salt). Contains 2% or less of: Vegetable Oil (canola and/or soybean oil), Silicon Dioxide (anticaking agent), Citric Acid, Natural Flavor.

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Try Our Other Varieties!
visit us at www.OLDPASO.com
For food safety and quality, follow the cooking directions.
DIRECTIONS
You Will Need: 1 Lb Lean Ground Beef, ¾ Cup Water
1. Cook beef in 10-inch skillet over **medium-high** heat 6 to 7 minutes, breaking up and stirring; drain.
2. Stir in water and seasoning mix; heat to boiling.
3. Reduce heat; simmer uncovered **3 to 4 minutes**, stirring often, until thickened. Refrigerate leftovers.

QUESTIONS OR COMMENTS?
Call 1-800-300-8664
Information from the package will be helpful.
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Ingredients: corn starch, maltodextrin, chili pepper, onion powder, salt, spice, sea salt.....



Compare Brands: Ketchup

Condiment	Sodium per 2 tablespoon
Heinz	320
Hunt's	360
Del Monte	380
Red Gold	160
Red Gold Naturally Balanced	100





Seasoning Primer

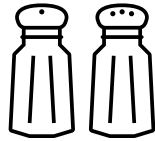




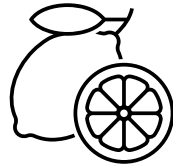
Seasonings or Flavorings



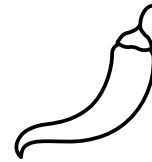
HERBS



SPICES



ACIDIC
INGREDIENTS
(CULINARY
ACIDS)



PEPPERS



CONDIMENTS



SAUCES



Herbs



Fresh Herbs



Dried Herbs



Pesto and Purees





Herbs

The leaves of aromatic plants

Some herbs dry more successfully than others

Aroma is a good indicator of quality in both fresh and dried herbs

1 tablespoon cut, fresh herbs = 1
teaspoon crumbled dry herbs = $\frac{1}{4}$
to $\frac{1}{2}$ teaspoon ground dried
herbs





Versatile Fresh Herbs

Parsley

Cilantro

Mint

Basil





Examples of Using Fresh Herbs

- Tomatoes with Fresh Basil
- Corn and Black Bean Salad with Cilantro
- Zucchini and Apple Salad with Mint
- Baked Potato with Chives





Spices

- Aromatics prepared from the roots, buds, flowers, fruits, bark or seeds of plants
 - Cinnamon comes from a bark
 - Pepper from a berry
 - Ginger from a root
 - Nutmeg from a fruit





Spices

Most spice flavors are intense and powerful

Spices are usually dried and available whole or ground

Whole spices retain flavor longer than ground spices





Developing Flavor: Spices

- Coleslaw with Caraway
- Spinach Dip with Nutmeg
- Black Beans with Toasted Cardamom
- Carrots with Cumin
- Butternut Squash with Cinnamon





Developing Flavor: Acidic Ingredients

Citrus Juices

Citrus Zests

Vinegars

Tomato Products





Developing Flavor: Acidic Ingredients

Carrots cooked with
orange juice or zest

Green beans with toasted
walnuts and vinaigrette

Vegetable Soup with
Tarragon Vinegar





Additional Flavor Ingredients

Onions

Garlic

Leeks



Additional Flavor Ingredients: Condiments

Horseradish

Wasabi

Ginger

Mustards

Pickles

Olives

Salsas





Additional Flavor Ingredients: **Peppers**

Hot Peppers

Sweet Peppers

Pepper Sauce





Developing Flavor: Peppers

Adobe Chili Sauce

Raspberry Chipotle Sauce

Marinated Roasted Peppers

Brown Rice Pilaf with Diced Peppers

Roasted Red Pepper Coulis



Spice Blend Activity – Building Flavor Without Salt