

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: Knife Skills

Day 2: Vegetable Cookery

Day 3: Great Grains

Day 4: Sandwiches

Day 5: Salads



# Daily Schedule

Culinary Lecture and Demonstration

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graph TD; A[Culinary Lecture and Demonstration] --> B[Practical Kitchen Experience]; B --> C[Technique / Recipe Evaluation]; C --> D[Kitchen Keys]; D --> E[Nutrition Keys];
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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?



# Units of Measurement

**Weight:** measure of an item's mass

- 2 units of weight
  - Ounce
  - Pounds

**Volume:** measure of amount of space an item takes up

- 7 units of volume
  - Teaspoon
  - Tablespoon
  - Fluid ounce
  - Cup
  - Pint
  - Quart
  - Gallon





Culinary Institute  
of America

# Day One





# Improved Nutrition in School Meals: Why Culinary Skills Matter



# Improving Meal Quality



Your cafeteria or school food operation may be the largest restaurant in your community!



"High quality, flavor, and attractiveness should be the keynotes of the child nutrition program food policy."

-Mary de Garmo Bryan, in the 1936 textbook

*The School Cafeteria*

# National School Lunch Act 1946

## **Purpose:**

"It is hereby declared to be the policy of Congress, *as a measure of national security, to safeguard the health and well-being of the Nation's children* and to encourage the domestic consumption of **nutritious** agricultural commodities and other food...."



# National School Lunch Act 1946

"...The *educational features of a properly chosen diet served at school* should not be under-emphasized. Not only is the child taught what a good diet consists of, but his parents and family likewise are indirectly instructed."

# The National School Lunch Act

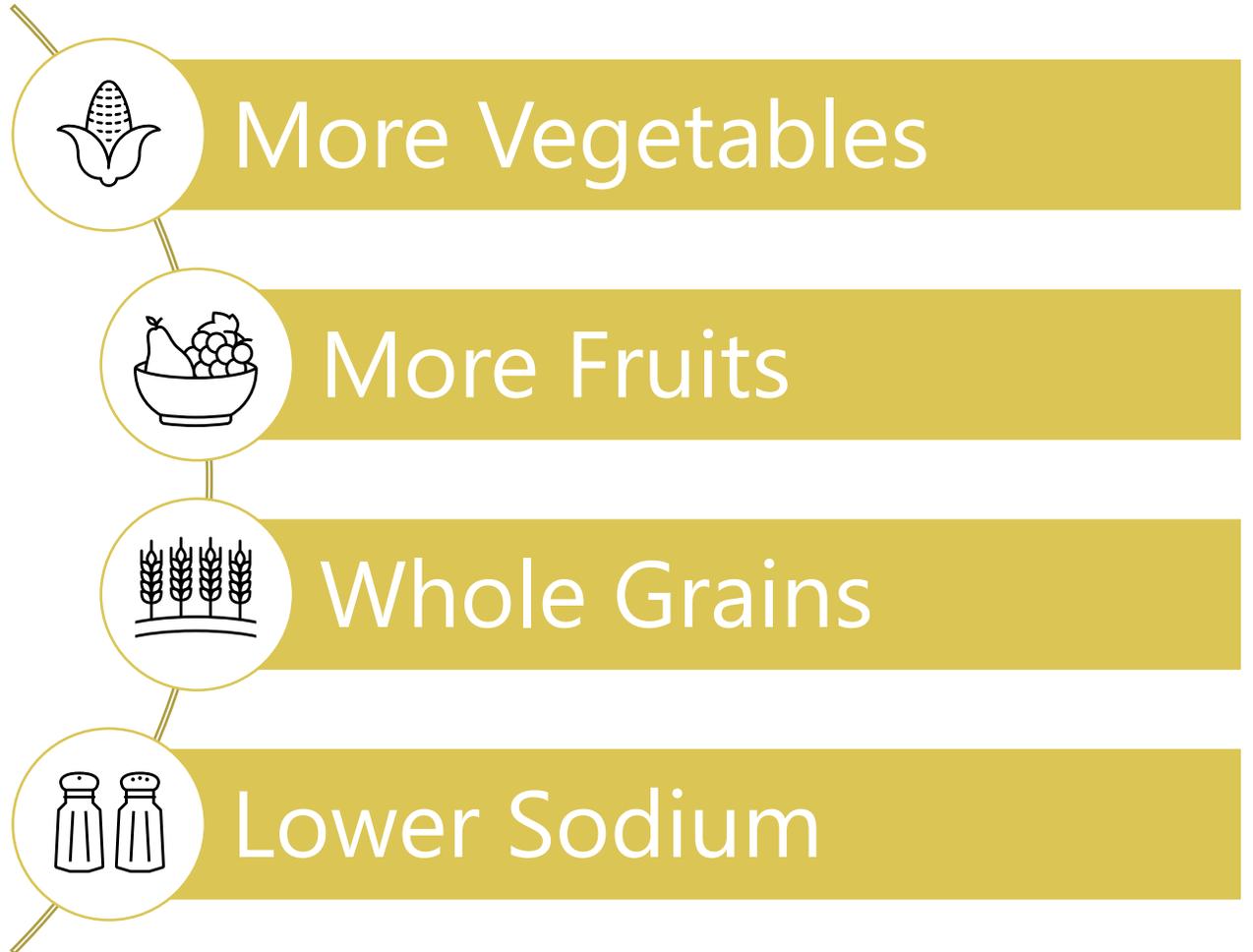
“In the long view, no nation is any healthier than its children or more prosperous than its farmers; and in the National School Lunch Act, the Congress has contributed immeasurably both to the welfare of our farmers and the health of our children.”

President Harry Truman  
June 4, 1946



# Healthy, Hunger-Free Kids Acts 2010

Improve the nutritional quality of school meals and ensure better access to healthy foods for children.

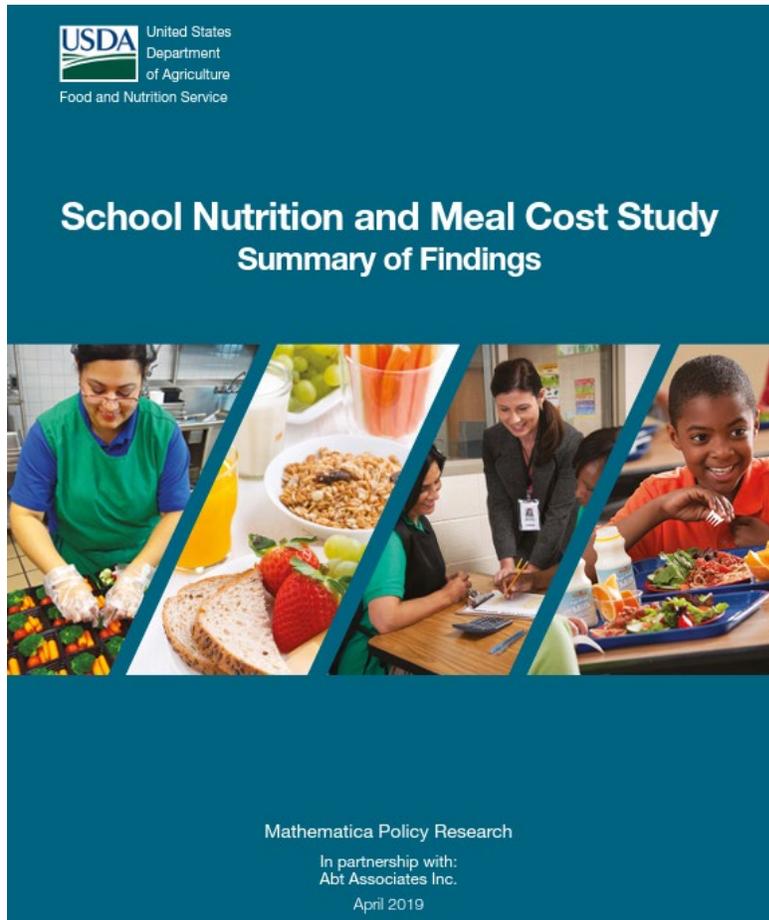


# School Meals Today



# School Nutrition and Meal Cost Study

A comprehensive research effort conducted by the USDA to assess various aspects of school meal programs (2019).



# School Meals are More Nutritious

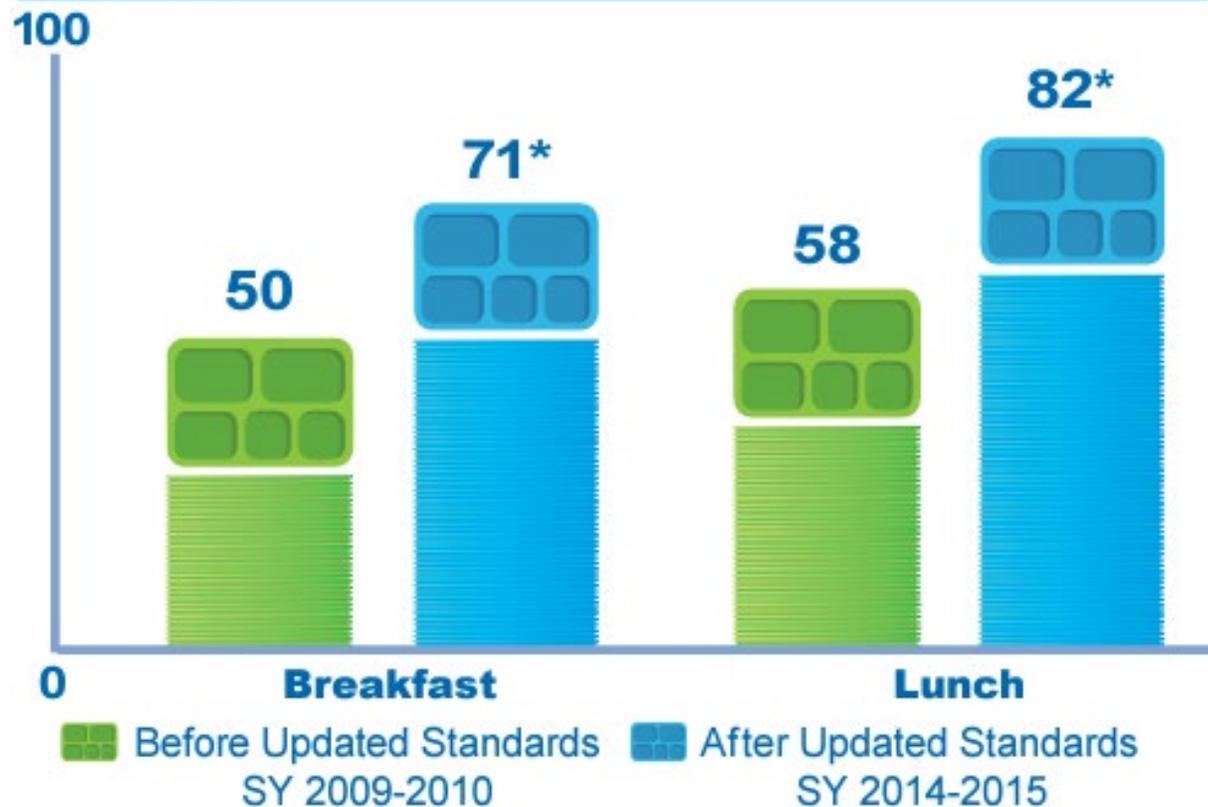
The Healthy Eating Index (HEI) assigns scores to meals based on how consistent they are with the Dietary Guidelines for Americans.

Higher scores indicate higher nutritional quality.



The HEI includes a total score and separate scores for different components of a healthy diet.

### Average Total HEI Scores of Schools Meals



The updated nutrition standards went into effect in school year (SY) 2012-2013. \*Difference between SY 2009-2010 and SY 2014-2015 is statistically significant.

# Academic Benefits



Improved standardized test scores in math and English Language Arts



Improved attention and learning retention



Improved overall attendance, reduced tardiness and decrease in suspensions



Increase in overall educational attainment in adulthood



# Health Benefits

Improved rates of mental illness (including anxiety and depression)

Improved overall behavioral health and reducing classroom disruptive behaviors

Reduced rates of overweight and obesity



# Equity Benefits

Reduce

Reduce rates of food insecurity

Reduce

Reduce stigmas related to free or reduced-price meals

Increase

Increase availability of nutritious foods to minority students



# Dietary Guidelines for Americans

Provide recommendations about what makes a healthy diet

Focus on disease *prevention* rather than disease *treatment*

Provides the foundation for nutrition programs and policies

Provides the foundation for nutrition education materials for the general public



# It's the Law

## **National School Lunch Act states:**

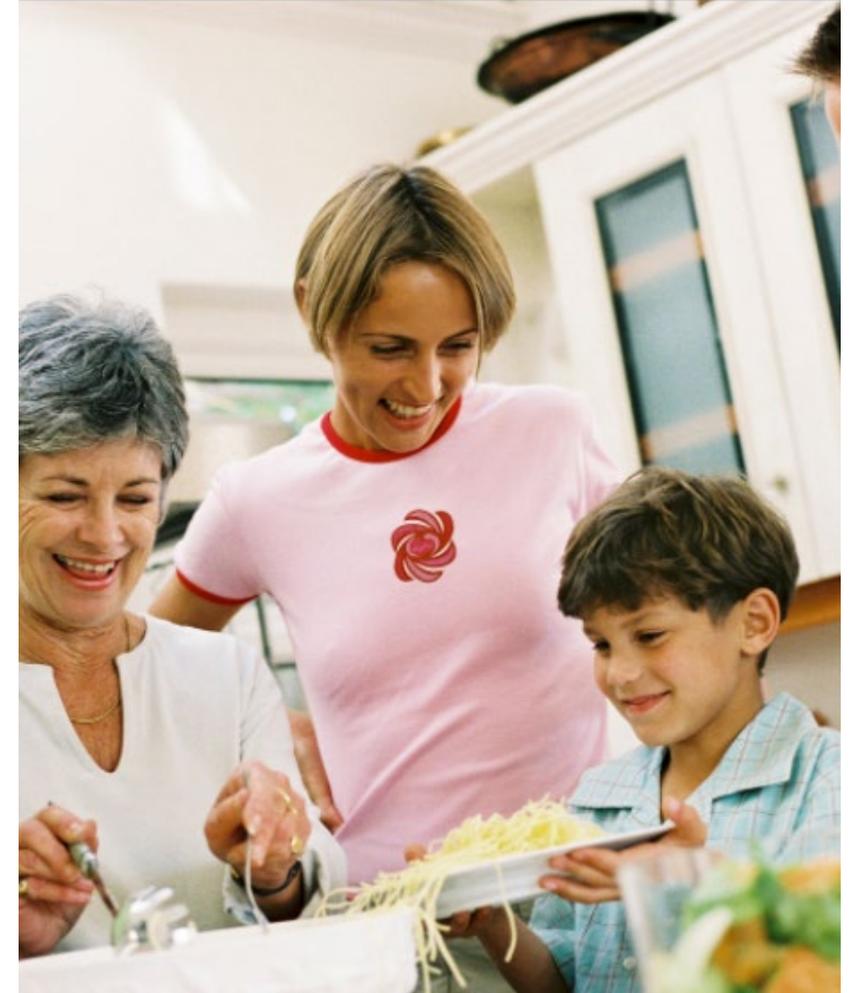
“Schools participating in the school lunch or school breakfast programs shall serve lunches and breakfasts under the program that are consistent with the **Dietary Guidelines.**”



# Dietary Guideline 1:

## Follow a healthy eating pattern across the lifespan.

- Life stages have unique nutrition needs
- Follow appropriate calorie levels:
  - Maintain healthy body weight
  - Support nutrient adequacy
  - Reduce risk of chronic diseases
- Focus on **nutrient density** (amount of nutrients you get for the calories consumed)



# Dietary Guideline 2:

## Customize and enjoy food and beverage choices.

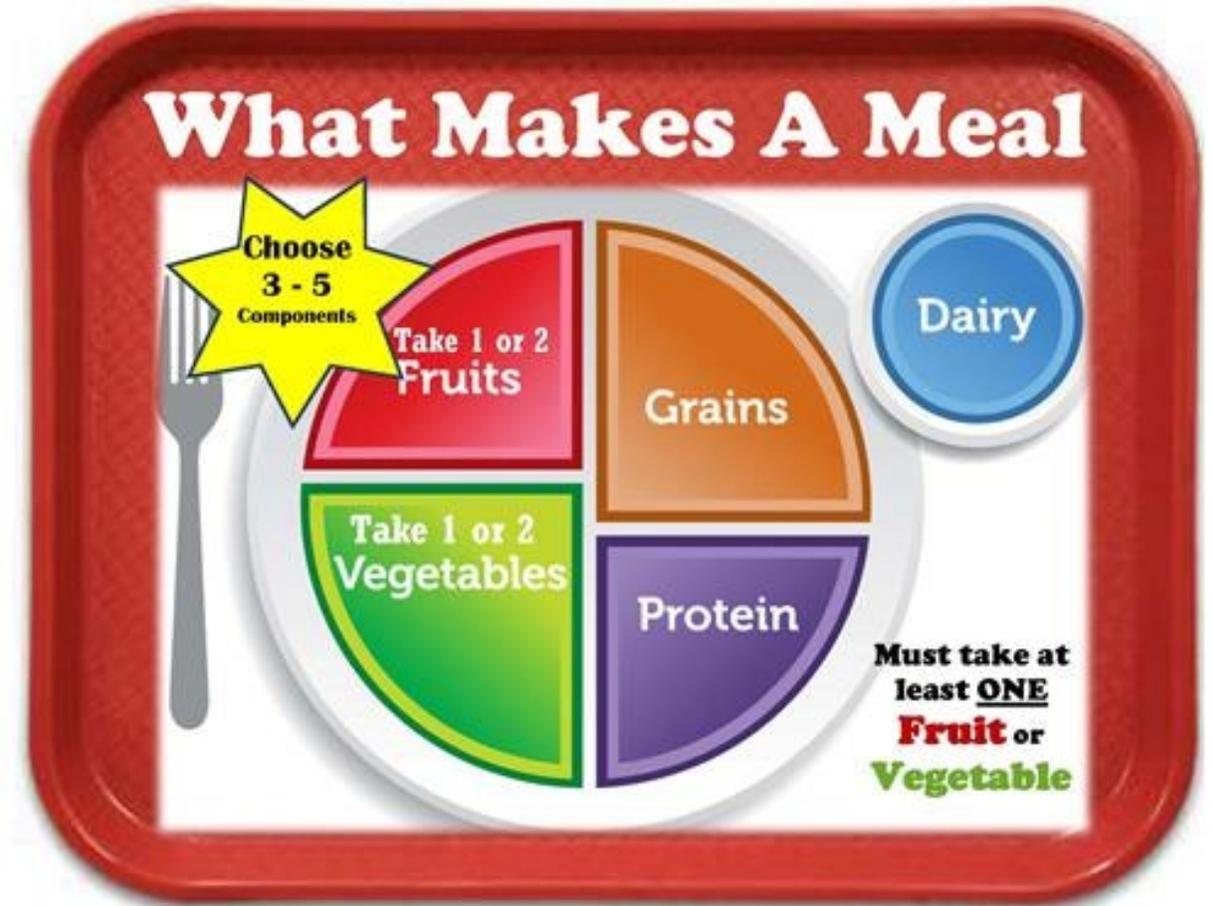
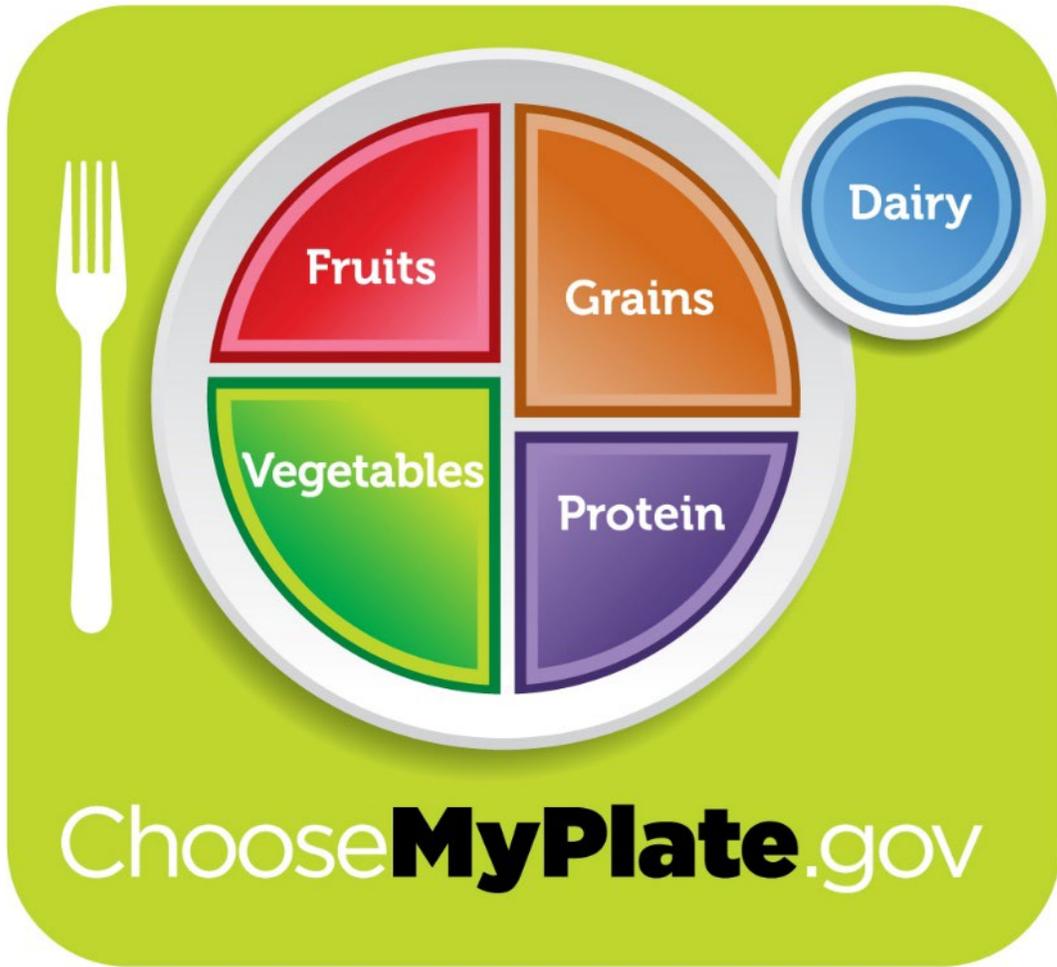
- Consider culturally diverse/relevant food choices
- Select a variety of nutrient-dense foods across and within five main food groups
  - Vegetables
  - Fruits
  - Grains
  - Dairy/fortified soy alternatives
  - Protein foods



# Dietary Guideline 3:

**Focus on meeting food group needs and stay within calorie limits.**

<b>Food Group</b>	<b>Recommendation</b>
Vegetables	<ul style="list-style-type: none"><li>Reduce the use of added salt, butter, and creamy sauces</li><li>Add vegetables to dishes like burgers, tacos, and pizzas</li></ul>
Fruits	<ul style="list-style-type: none"><li>Offer a variety of whole, fresh fruits in season</li></ul>
Grains	<ul style="list-style-type: none"><li>At least 50% of all grains should be whole-grain rich</li></ul>
Dairy	<ul style="list-style-type: none"><li>Fat-free and low-fat dairy products are recommended.</li></ul>
Protein	<ul style="list-style-type: none"><li>If serving animal protein, aim for lean forms (chicken breast or ground turkey) over the more processed forms (hot dogs or ham)</li><li>Add more plant protein</li></ul>



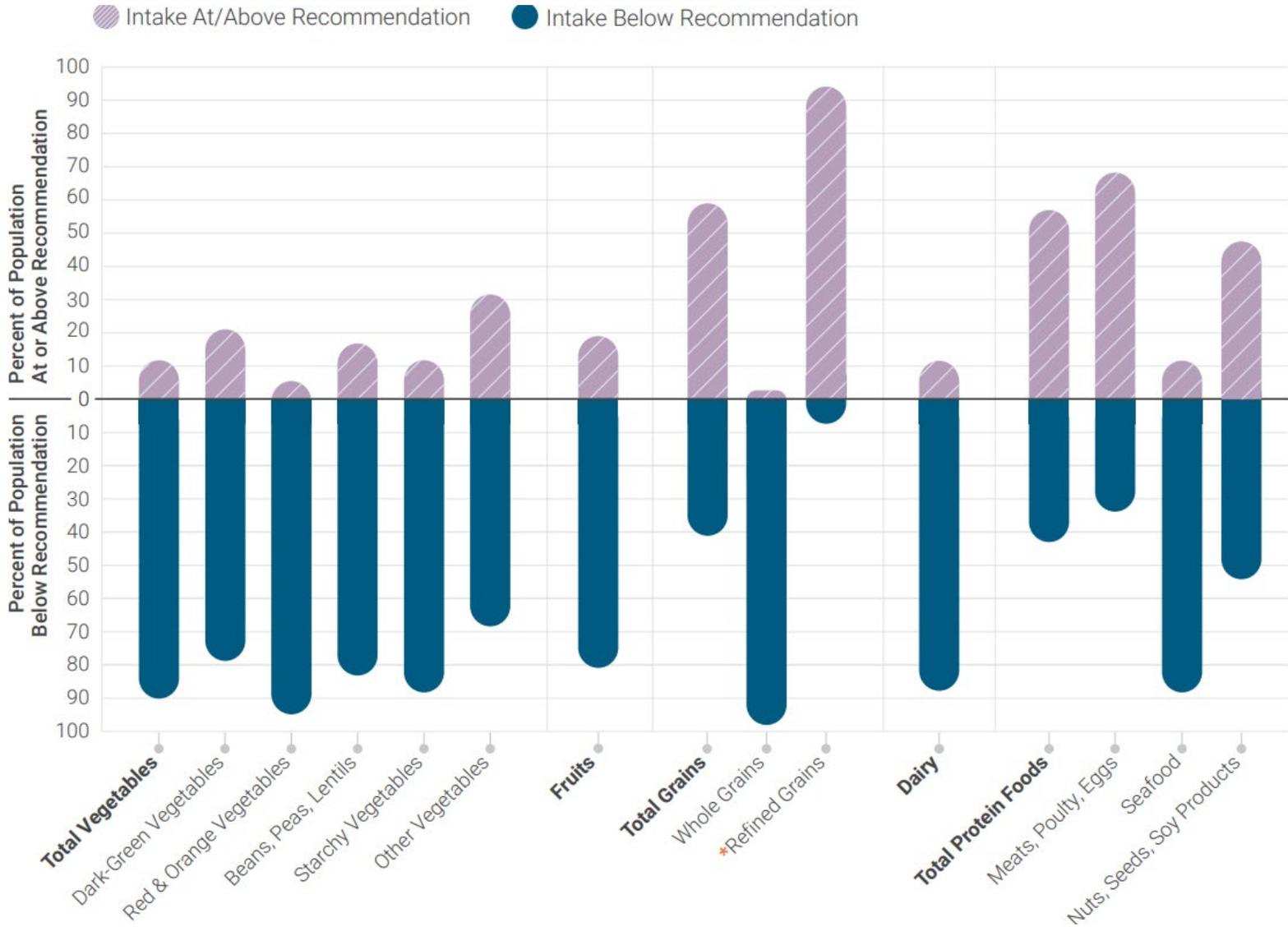
# Dietary Guideline 4:

Limit food and beverages higher in added sugars, saturated fat, and sodium.

The 85-15 Guide: Percentage of Calories Needed To Meet Food Group Needs With Nutrient-Dense Choices and Percentage Left for Other Uses



# Current Eating Patterns in the United States





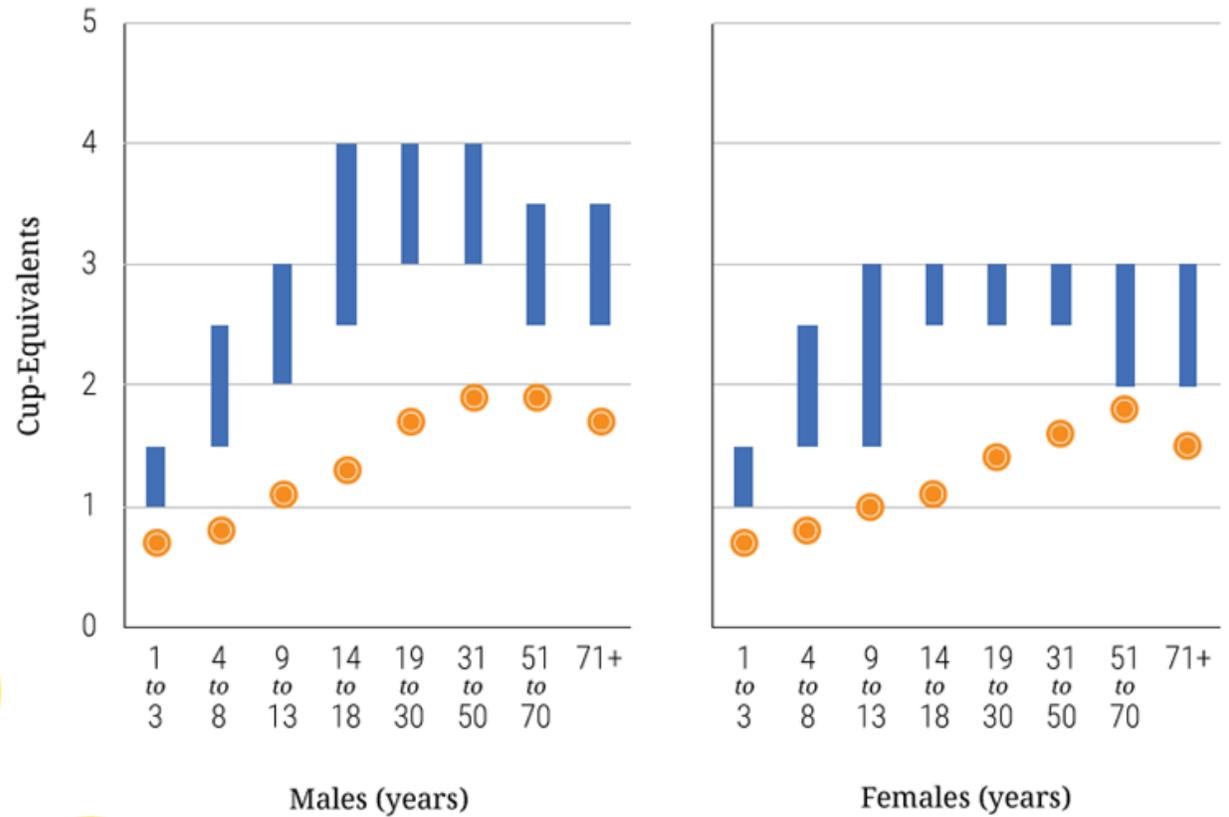
# Vegetables: Intakes and Recommendations

Average Daily Intakes by Age-Sex Groups, Compared to Ranges of Recommended Intake

Recommended Intake Ranges | Average Intake

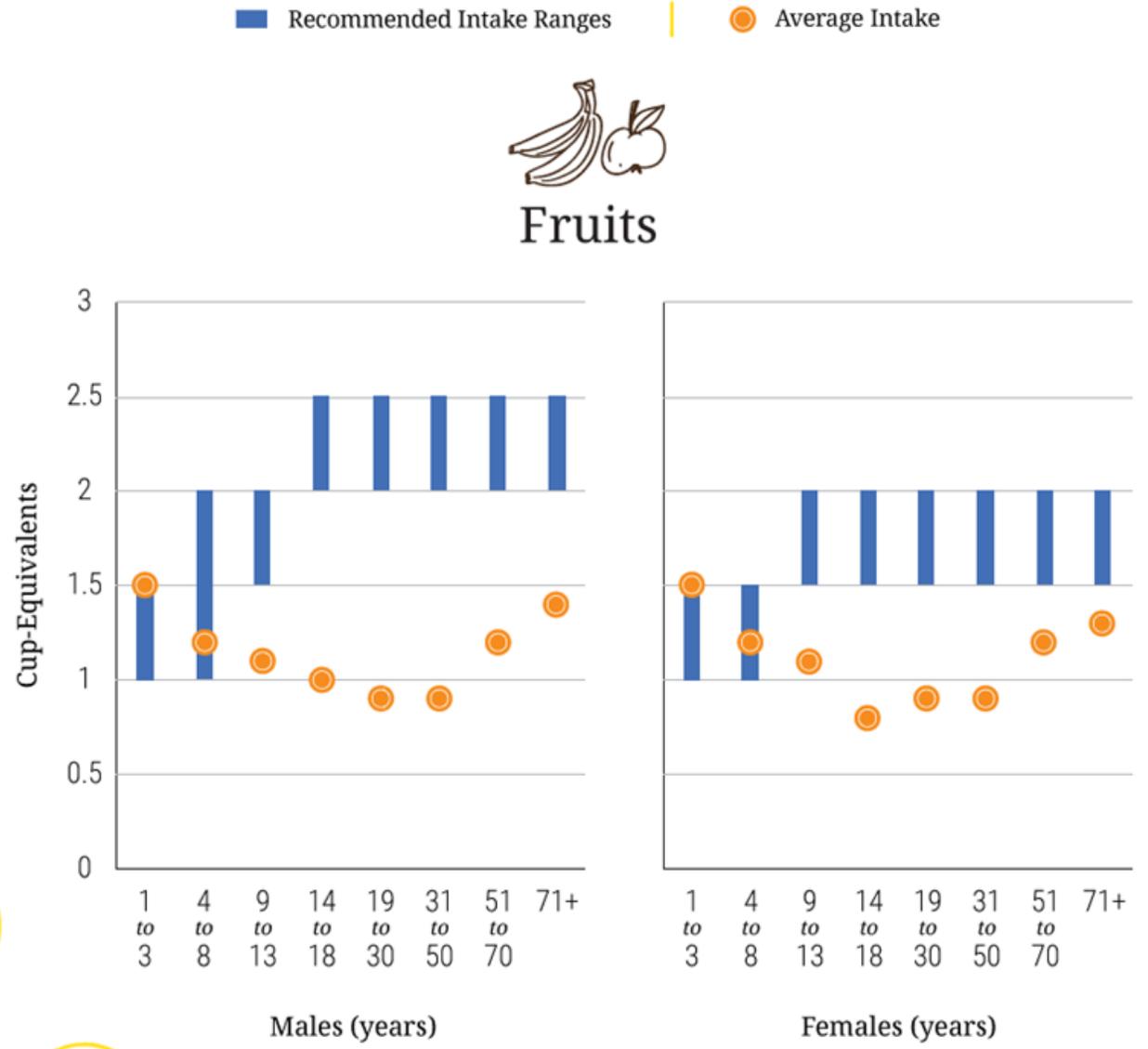


## Vegetables



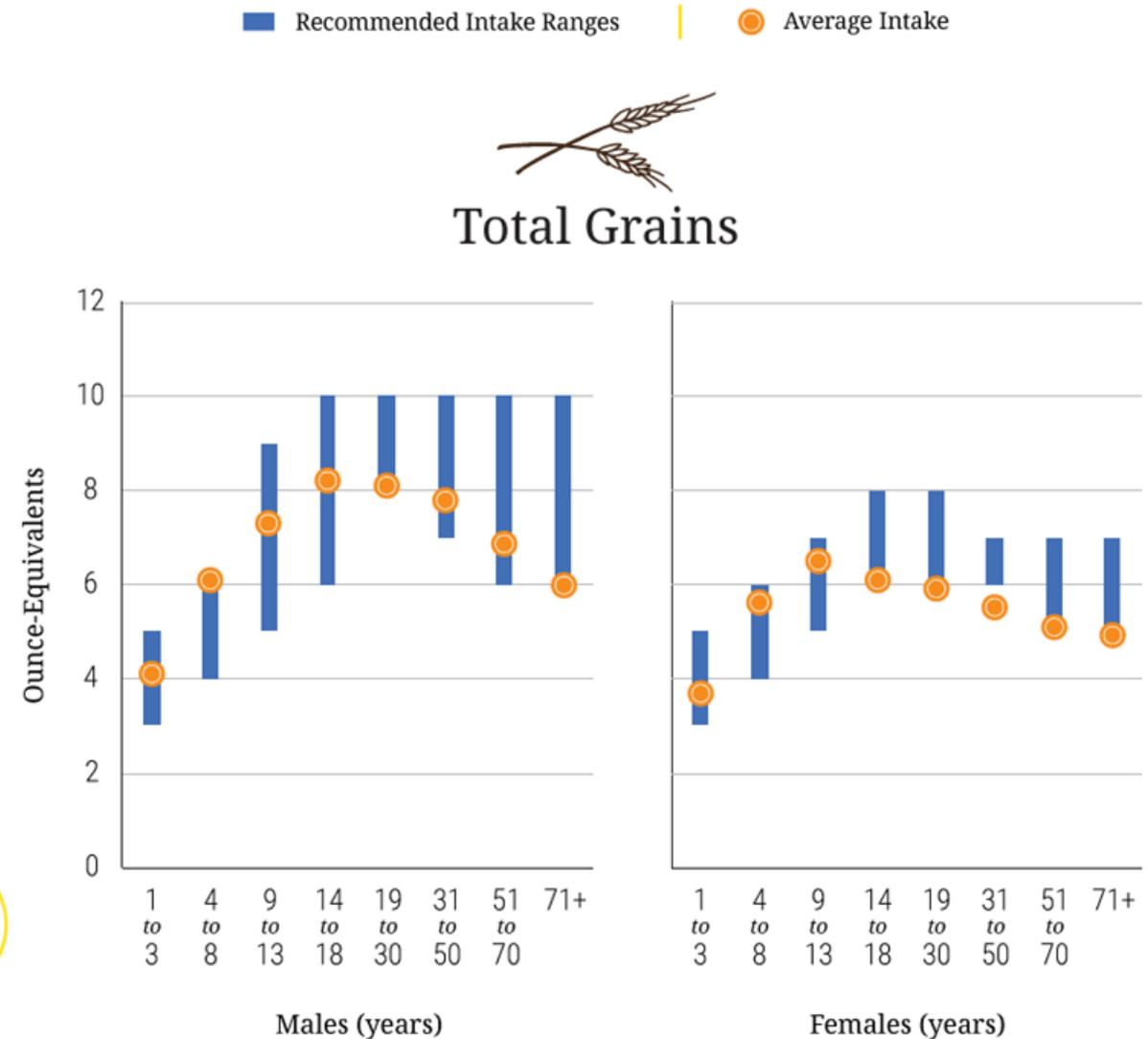
# Fruits: Intakes and Recommendations

Average Daily Intakes by Age-Sex Groups, Compared to Ranges of Recommended Intake



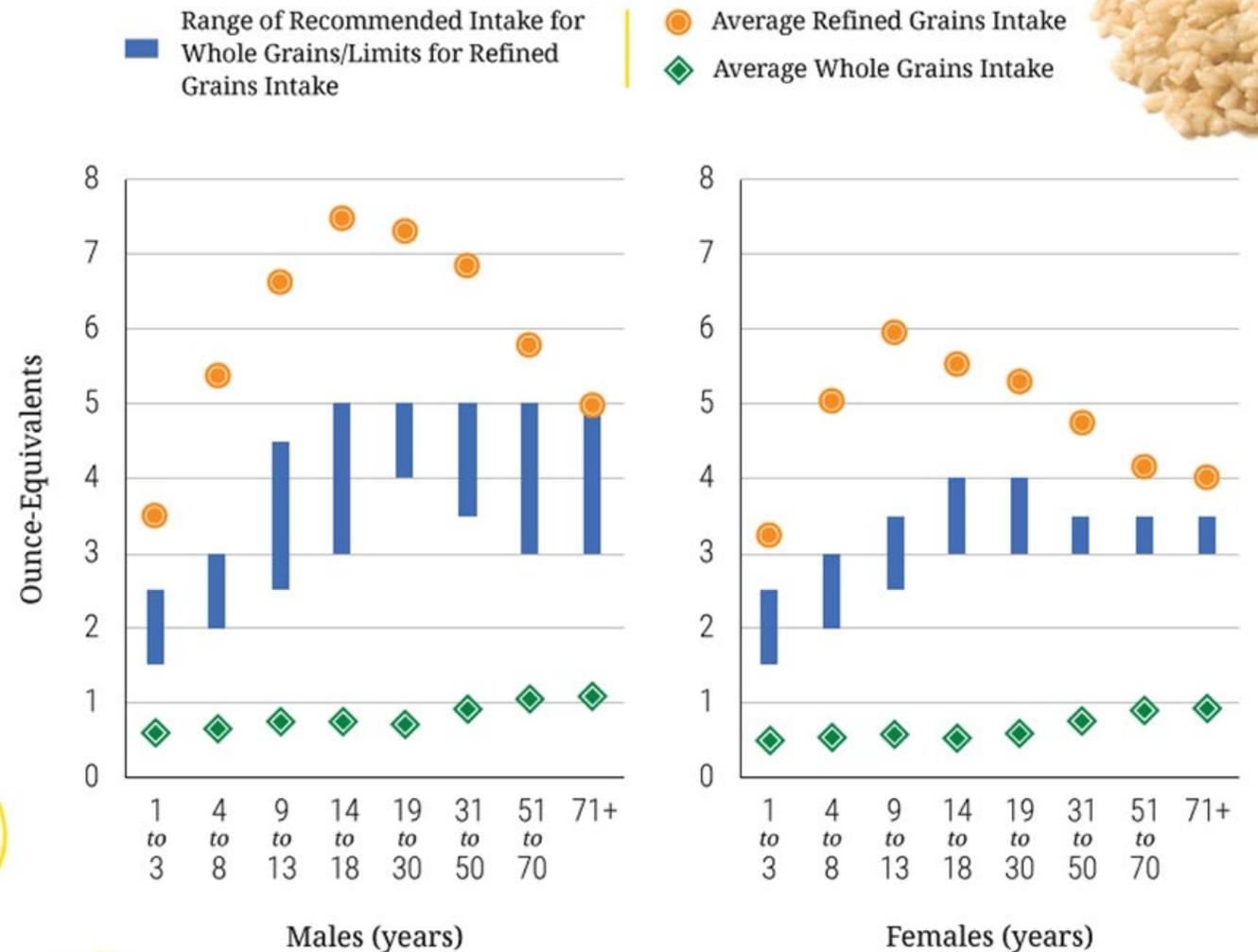
# Total Grains: Intakes and Recommendations

Average Daily Intakes by Age-Sex Groups, Compared to Ranges of Recommended Intake



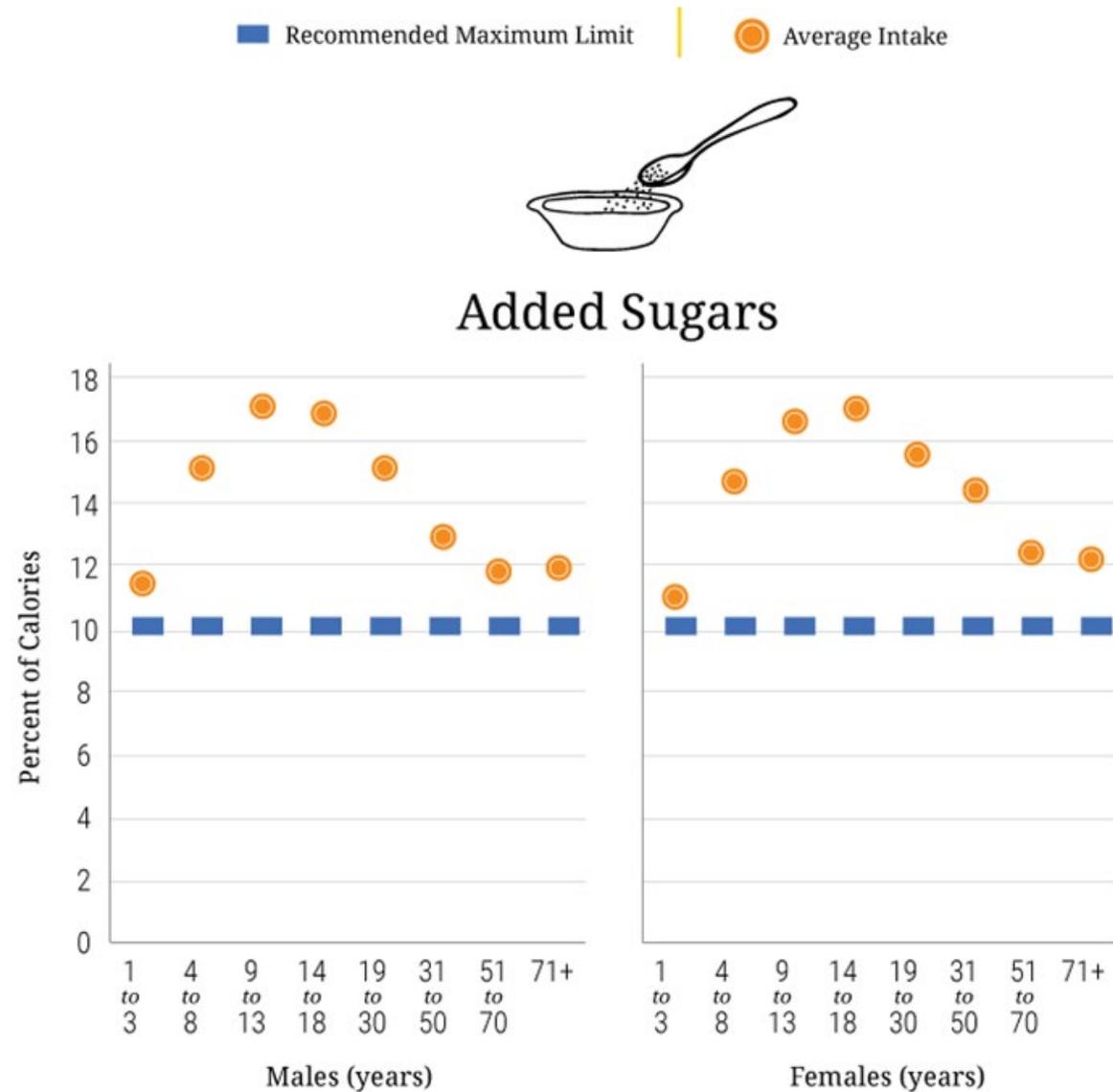
# Whole and Refined Grains: Intakes and Recommendations

Average Intakes by Age-Sex Groups, Compared to Ranges of Recommended Daily Intake for Whole Grains and Limits for Refined Grains



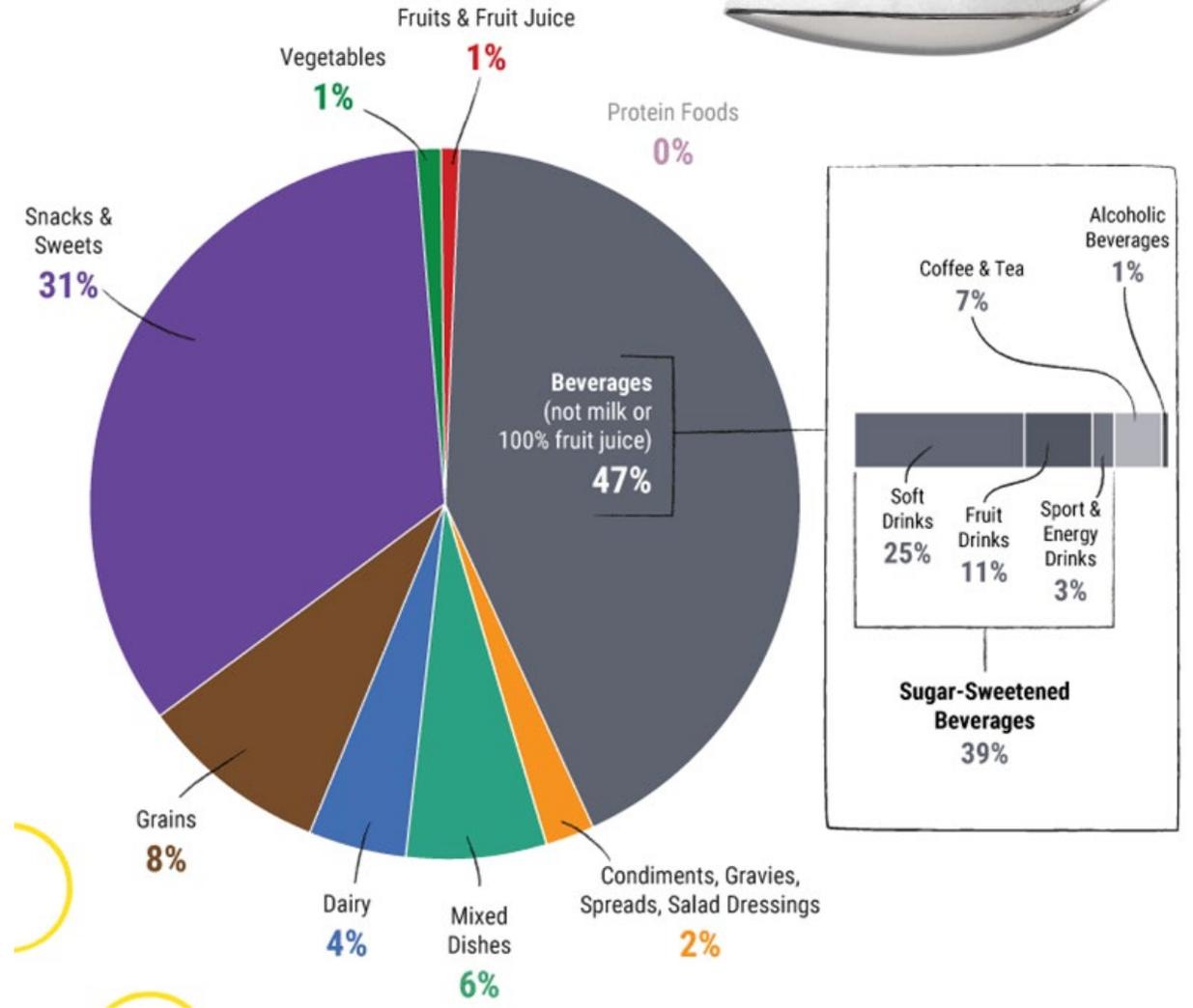
# Added Sugars: Intakes and Limit

Average Intakes as a Percent of Calories per Day by Age-Sex Group, in Comparison to the Dietary Guidelines Maximum Limit of Less than 10 Percent of Calories



# Food Sources of Added Sugars

Food Category Sources of Added Sugars in the U.S. Population Ages 2 Years and Older





# Nudging Nutrition: Encouraging Healthy Food Choices in Schools



# Encouraging Healthy Choices

Product  
Placement

Improve taste  
and quality

Increase variety

Write an  
appealing  
menu

Use positive  
communication

Maintain a  
pleasant  
environment

# Make Healthy Food More Convenient

The easier it is to eat a food, the more likely we are to eat it!

- Middle of display or refrigerator
- Put indulgent treats at the very top or bottom of shelves and in the back

# 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

MIDDLE SCHOOL LUNCH All Meals Served With Choice of Milk

## MONDAY Today's Menu

**Spaghetti,  
Breadstick**



**OR**

**Turkey &  
Cheese  
Sandwich**



ALL GRAIN/BREAD PRODUCTS ARE WHOLE GRAIN OR ENRICHED.

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
	<b>1</b> <b>HAPPY NEW YEAR</b> No School	<b>2</b> <ul style="list-style-type: none"> <li>Hot Dog w/ Bun</li> <li>Baked Beans</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>3</b> <ul style="list-style-type: none"> <li>Chicken Salad on Bun</li> <li>Carrot Sticks</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>4</b> <ul style="list-style-type: none"> <li>Stuffed Crust Pizza</li> <li>Boiled Broccoli</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>
<b>7</b> <ul style="list-style-type: none"> <li>Cinnamon French Toast</li> <li>Potato Smiles</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>8</b> <ul style="list-style-type: none"> <li>Beef Taco Meal w/ Tortilla Rounds</li> <li>Salsa</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>9</b> <ul style="list-style-type: none"> <li>Ham &amp; Cheese Wrap</li> <li>Dill Pickles</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>10</b> <ul style="list-style-type: none"> <li>Chicken Patty on Bun</li> <li>Boiled Carrots</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>11</b> <ul style="list-style-type: none"> <li>Cheese Pizza 4X6</li> <li>Boiled Broccoli</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>
<b>14</b> <ul style="list-style-type: none"> <li>Fish Sticks, Alaska Pollock</li> <li>Breaded Mozzarella Cheesesticks</li> <li>Peas</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>15</b> <ul style="list-style-type: none"> <li>Beef Taco Meal w/ Tortilla Rounds</li> <li>Salsa</li> <li>Kidney Beans</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>16</b> <ul style="list-style-type: none"> <li>Egg, Cheese, Bacon on Bun</li> <li>Sweet Potato Bites</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>17</b> <ul style="list-style-type: none"> <li>Chicken Parmesan on Bun</li> <li>Green Beans</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>18</b> <ul style="list-style-type: none"> <li>The Max Round 5" Pizza</li> <li>Boiled Broccoli</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>
<b>21</b> <b>MLK DAY</b> No School	<b>22</b> <ul style="list-style-type: none"> <li>Beef Taco Meal w/ Tortilla Rounds</li> <li>Salsa</li> <li>Kidney Beans</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>23</b> <ul style="list-style-type: none"> <li>Turkey &amp; Cheese on Bun</li> <li>Carrot Sticks</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>24</b> <ul style="list-style-type: none"> <li>Chicken Alfredo</li> <li>Dinner Roll WG</li> <li>Green Beans</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>25</b> <ul style="list-style-type: none"> <li>TONY'S® 51% WG Bacon Scramble Pizza</li> <li>Boiled Broccoli</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>
<b>28</b> <ul style="list-style-type: none"> <li>Cheeseburger on Bun</li> <li>Baked Beans</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	<b>29</b> <ul style="list-style-type: none"> <li>Beef Taco Meal w/ Tortilla Rounds</li> <li>Salsa</li> <li>Assorted Fresh Fruit</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>30</b> <ul style="list-style-type: none"> <li>Pancake &amp; Sausage Stick</li> <li>Potato Smiles</li> <li>Assorted Fruit Juice</li> <li>Salad Bar</li> <li>Milk Variety</li> </ul>	<b>31</b> <ul style="list-style-type: none"> <li>Popcorn Chicken</li> <li>Mashed Potatoes</li> <li>Corn</li> <li>Salad Bar</li> <li>Assorted Fresh Fruit</li> <li>Milk Variety</li> </ul>	

**What Makes a Lunch?**  
 Select 3-5 Components

MILK	GRAIN	VEGETABLE
FRUIT	PROTEIN	BEAN/PEAS

One must be a  
 FRUIT OR VEGGIE

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

# K-5 Menu with Smarter Lunchroom Names

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

**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

# 6-8 Menu with Smarter Lunchroom Names

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

## 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)





Culinary Institute  
of America

# Day Two





# Pulses: Dried Beans, Dried Peas, Lentils, & Chickpeas



# What are Pulses?

- Legumes = pulses
- Edible seed portion of legume plant
  - Flowering plant with ~20,000 species
- Variety of beans, peas, lentils
- Versatile, delicious flavor, nutrient-dense
- Packed with vitamins + minerals, complex carbohydrates, fiber, protein, minimal fat



# Vegetable, Protein, or Both?

- Both!
- USDA's MyPlate
  - Vegetable – high in potassium + folate
  - Protein – popular alternative to meat
- Required to serve at least  $\frac{1}{2}$  cup of cooked beans or peas every week





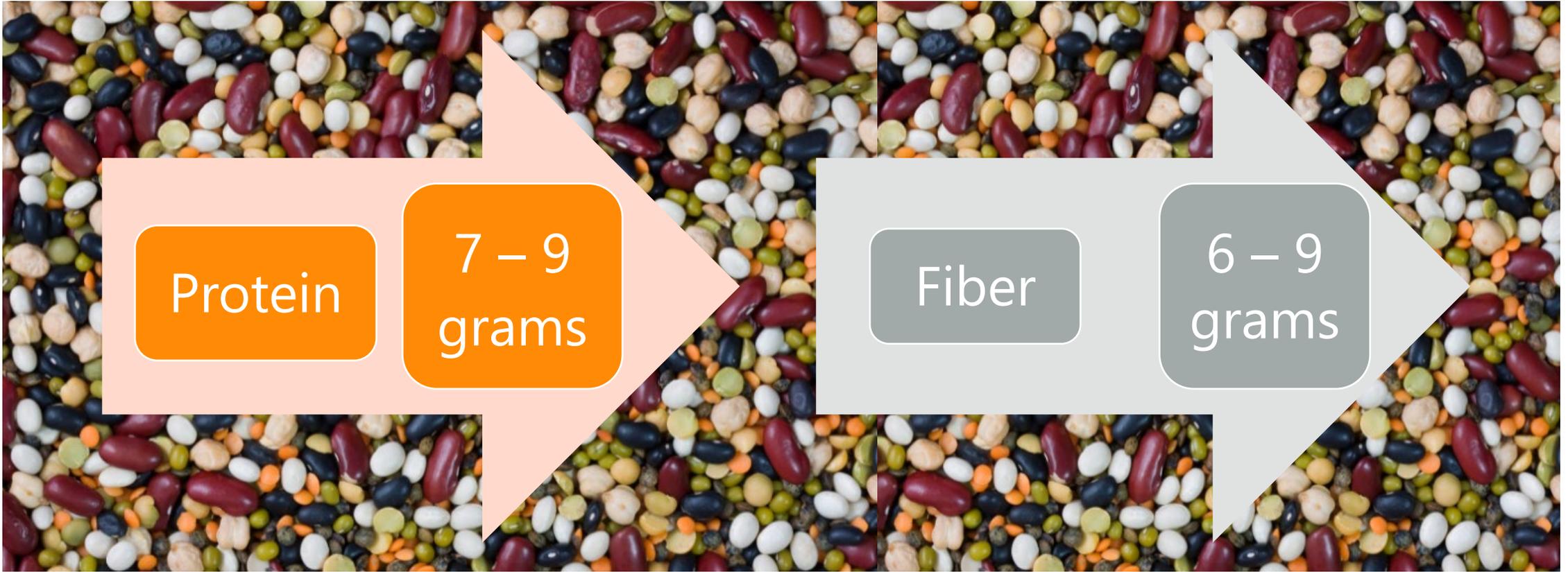
## Vegetable Subgroups in the NSLP

Dark Green Fresh, frozen, and canned	Red/Orange Fresh, frozen, and canned	Beans and Peas (Legumes)* Cooked from dry, canned, or frozen	
<ul style="list-style-type: none"> <li>■ Arugula</li> <li>■ Beet greens</li> <li>■ Bok choy</li> <li>■ Broccoli</li> <li>■ Broccoli rabe (rapini)</li> <li>■ Broccolini</li> <li>■ Butterhead lettuce (Boston, Bibb)</li> <li>■ Chicory</li> <li>■ Cilantro</li> <li>■ Collard greens</li> <li>■ Endive</li> <li>■ Escarole</li> <li>■ Fiddle heads</li> <li>■ Grape leaves</li> <li>■ Kale</li> <li>■ Mesclun</li> <li>■ Mustard greens</li> <li>■ Parsley</li> <li>■ Spinach</li> <li>■ Swiss chard</li> <li>■ Red leaf lettuce</li> <li>■ Romaine lettuce</li> <li>■ Turnip greens</li> <li>■ Watercress</li> </ul>	<ul style="list-style-type: none"> <li>■ Acorn squash</li> <li>■ Butternut squash</li> <li>■ Carrots (orange only)</li> <li>■ Cherry peppers</li> <li>■ Hubbard squash</li> <li>■ Orange peppers</li> <li>■ Pimientos</li> <li>■ Pumpkin</li> <li>■ Red chili peppers</li> <li>■ Red peppers</li> <li>■ Salsa (100% vegetables)</li> <li>■ Spaghetti squash</li> <li>■ Sweet potatoes</li> <li>■ Tomatoes</li> <li>■ Tomato juice</li> <li>■ Winter squash</li> <li>■ Yams</li> </ul>	<ul style="list-style-type: none"> <li>■ Black beans</li> <li>■ Black-eyed peas (mature, dry)</li> <li>■ Cowpeas</li> <li>■ Edamame</li> <li>■ Fava beans</li> <li>■ Garbanzo beans (chickpeas)</li> <li>■ Great northern beans</li> <li>■ Kidney beans</li> <li>■ Lentils</li> <li>■ Lima beans, (mature, dry)</li> <li>■ Mung beans</li> <li>■ Navy beans</li> <li>■ Pink beans</li> <li>■ Pinto beans</li> <li>■ Red beans</li> <li>■ Refried beans</li> <li>■ Soy beans (mature, dry)</li> <li>■ Split peas</li> <li>■ White beans</li> </ul> <p>* Does not include immature (fresh) beans or peas, such as green beans, green lima beans and green (string) beans</p>	
Starchy Fresh, frozen, and canned	Other Fresh, frozen, and canned		
<ul style="list-style-type: none"> <li>■ Black-eyed peas, fresh (not dry)</li> <li>■ Corn</li> <li>■ Cassava</li> <li>■ Cowpeas, fresh (not dry)</li> <li>■ Field peas, fresh (not dry)</li> <li>■ Green bananas</li> <li>■ Green peas</li> <li>■ Hominy, whole (canned, drained)</li> <li>■ Jicama</li> <li>■ Lima beans, green (not dry)</li> <li>■ Parsnips</li> <li>■ Pigeon peas, fresh (not dry)</li> <li>■ Plantains</li> <li>■ Potatoes</li> <li>■ Poi</li> <li>■ Taro</li> <li>■ Water chestnuts</li> <li>■ Yautia (tannier)</li> </ul>	<ul style="list-style-type: none"> <li>■ Artichokes</li> <li>■ Asparagus</li> <li>■ Avocado</li> <li>■ Bamboo shoots</li> <li>■ Bean sprouts, cooked only (for food safety), e.g., alfalfa, mung</li> <li>■ Beans, green and yellow</li> <li>■ Beets</li> <li>■ Breadfruit</li> <li>■ Brussels sprouts</li> <li>■ Cabbage (green, red, celery, Napa)</li> <li>■ Cactus (nopales)</li> <li>■ Cauliflower</li> <li>■ Carrots, rainbow (e.g., pink, purple, red, white, and yellow)</li> <li>■ Celeric</li> <li>■ Celery</li> <li>■ Chayote (mirifiton)</li> <li>■ Cucumbers</li> <li>■ Chives</li> <li>■ Daikon (oriental radish)</li> <li>■ Eggplant</li> <li>■ Fennel</li> <li>■ Garlic</li> <li>■ Green chili peppers</li> <li>■ Green onions (scallions)</li> <li>■ Green peppers</li> <li>■ Horseradish</li> <li>■ Iceberg lettuce</li> <li>■ Kohlrabi</li> <li>■ Leeks</li> <li>■ Mushrooms</li> <li>■ Okra</li> <li>■ Olives</li> <li>■ Onions (white, yellow, red)</li> <li>■ Peas in pod, e.g., snap peas, snow peas</li> <li>■ Pepperoncini</li> <li>■ Pickles (cucumber)</li> <li>■ Purple peppers</li> <li>■ Radishes</li> <li>■ Rhubarb</li> <li>■ Rutabagas</li> <li>■ Shallots</li> <li>■ Sauerkraut</li> <li>■ Seaweed</li> <li>■ Snap peas</li> <li>■ Snow peas</li> <li>■ Tomatillo</li> <li>■ Turnips</li> <li>■ Wax beans</li> <li>■ White sweet potatoes</li> <li>■ Yellow peppers</li> <li>■ Yellow summer squash</li> <li>■ Zucchini squash</li> </ul>		



# Important Nutrients

Per 1/2 cup cooked pulses:





# Important Nutrients in Pulses

---

Excellent source of folate

---

Good source of potassium

---

Iron-rich

---

High in antioxidants



# Versatility in School Meals



## Side salads

Tuscan White Bean Salad



## Salad toppers

Moroccan Crispy Roasted Chickpeas



## Vegetable side dish

Red Beans & Rice  
Burke County School Nutrition



## Plant-based main dish

Asian-Style Sweet & Spicy Veggie Burger



## Breakfast

Huevos Rancheros

# Pulses: Purchasing Forms

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Canned

---

Dried

---

Dehydrated

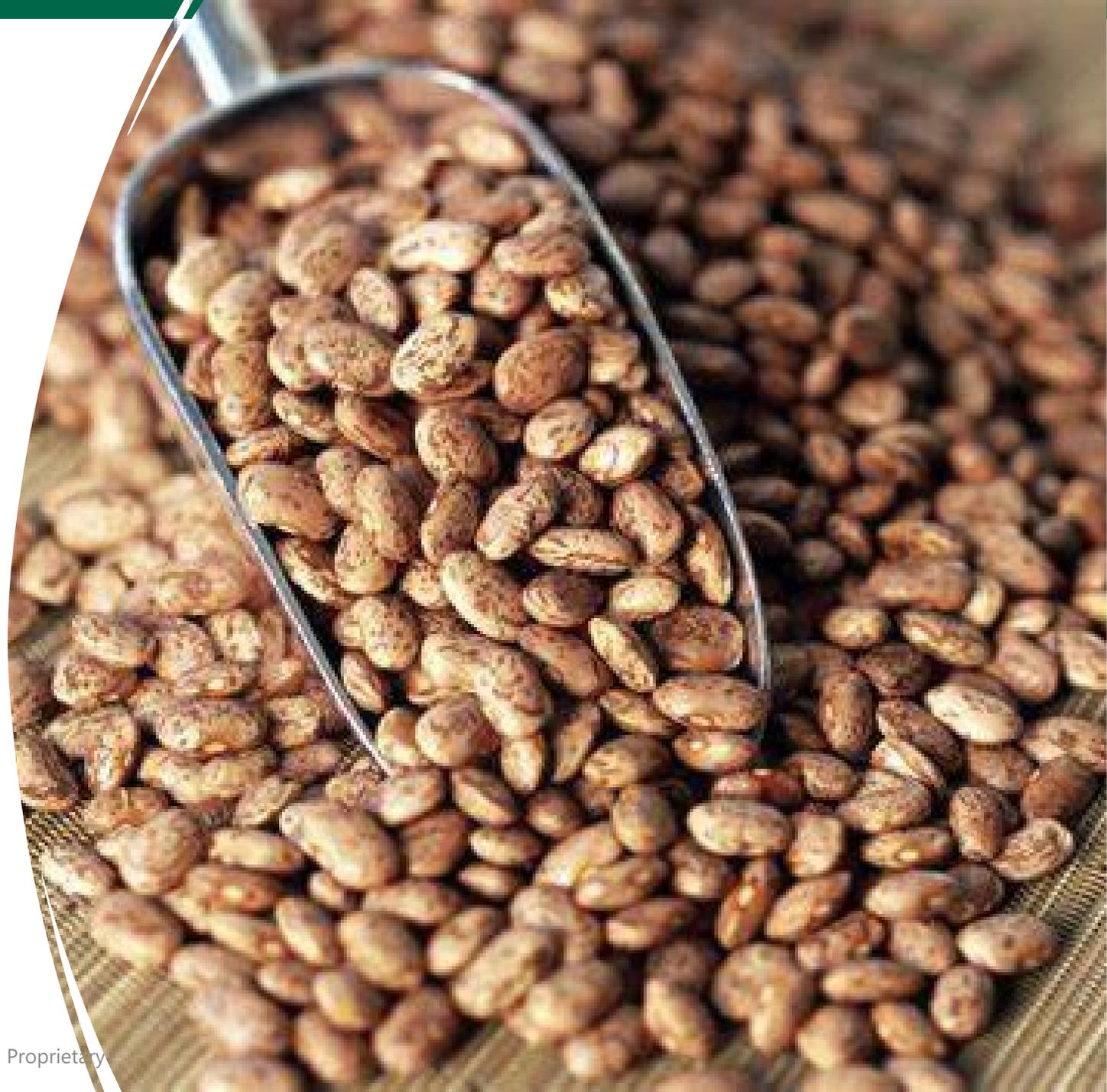
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Frozen-IQF



# Pinto Bean

- Light brown color
- Creamy texture
- Mild, earthy flavor
- Commonly used in Mexican cuisine and are great for refried beans



# Small Red Bean

- Slightly smaller than kidney beans
- Robust flavor and firm texture
- Often used in soups, chili, and Creole dishes



# Pink Bean

- Similar in size to pinto beans
- Have a smooth, delicate flavor
- Often used in Caribbean and Latin American dishes



# Red Kidney Bean

- Large, kidney-shaped
- Deep red color
- Slightly sweet flavor
- Commonly used in chili, soups, and salads



# Great Northern Bean

- Medium-sized white beans
- Delicate flavor
- Smooth texture
- Great for casseroles, soups, and stews



# Large Lima Bean

- Also known as butter beans
- Starchy, buttery texture
- Slightly sweet flavor
- Often used in Southern cuisine



# White Kidney Bean

- Also known as Cannellini Beans
- Large, creamy white beans
- Slightly nutty flavor
- Popular in Italian dishes like minestrone and salads



# Navy Bean

- Small white beans
- Mild flavor
- Soft texture
- Often used in baked beans and soups



# Small White Bean

- Slightly smaller than navy beans
- Mild flavor
- Often used in soups and stews



# Black Bean

- Small, shiny black beans
- Dense, meaty texture
- Earthy flavor
- Commonly used in Latin American and Caribbean cuisines



# Whole Green Pea

- Round, green peas
- Slightly sweet flavor
- Often used in soups and stews



# Green Split Pea

- Dried, peeled, and split green peas
- Cook quickly
- Slightly sweet, earthy flavor
- Ideal for soups and purees



# Yellow Split Pea

- Similar to green split peas
- Milder, sweeter flavor
- Often used in Indian dal and soups



# Lentil

- Small, lens-shaped legumes
- Come in various colors, including green, brown, and red
- Mild, earthy flavor
- Cook quickly
- Perfect for soups and stews



# Cranberry Bean

- Also known as borlotti beans
- Beige with red speckles
- Creamy texture
- Slightly nutty flavor
- Commonly used in Italian and Portuguese dishes



# Chickpea/Garbanzo Bean

- Round, beige legumes
- Firm texture
- Nutty flavor
- They are the key ingredient in hummus and falafel



# Black-Eyed Pea

- Cream-colored peas with a black spot
- Mild, earthy flavor
- Often used in Southern and African American cuisine





# Farm to School



# Three Core Elements of Farm to School

Procurement

Education

School  
Garden



# USDA Office of Community Food Systems



increase the availability of local foods in child nutrition programs



promote hands-on learning activities such as gardening, farm visits, and culinary classes



encourage the integration of food related education into regular, standards-based curriculum to help children make lifelong healthy eating choices



# School Gardens



# Composting



# Composting: Vermiculture



# School Garden



# Container Gardening



# Tower Gardens

Grow more in less time

Grow inside cafeteria

Less mess

Moveable



**Westside Elementary School,  
Warner Robins, Georgia**

# Greenhouses



**Howard Valentine  
Coffman Cove School,  
Alaska**



**Unicoi County Schools,  
Tennessee**

# Hydroponics in Schools

Students at Amidon-Bowen Elementary in Washington, D.C. excited about the fast growth of their salad greens.

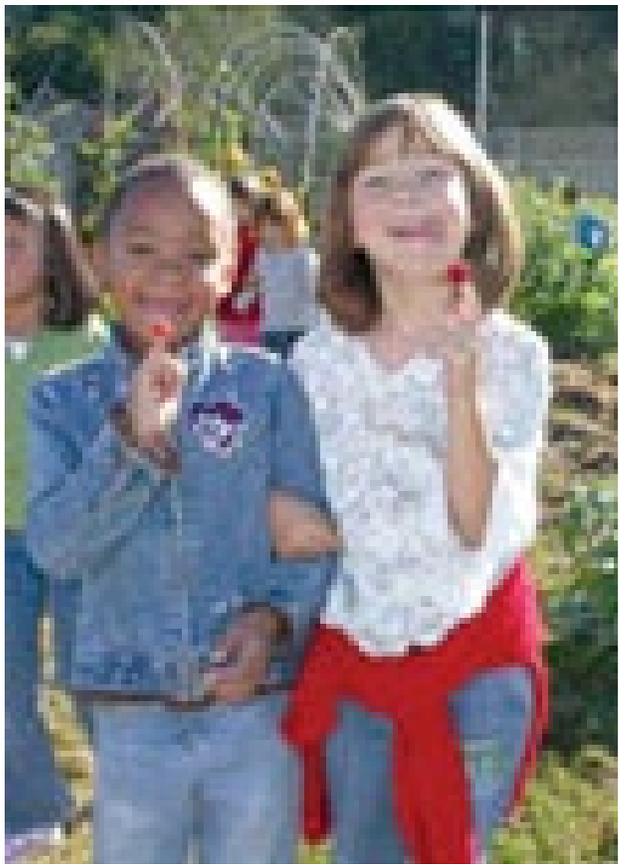


# Raising Cows

**Hagerstown  
Junior/Senior High  
School,  
Wayne County, Indiana**



# Chickens!



**Lincoln Elementary School,  
Olympia, WA**

# Spartanburg County School District 6

- District: 11,000 students, 15 schools
- Greenhouse
- 16 acres of crops
  - Broccoli
  - Cabbage
  - Cucumber
  - Sweet potatoes
  - Blueberries
  - Watermelon
  - Honey





# Farm to School: Food Education



# Food Cultures

USDA  
United States Department of Agriculture

## BRINGING TRIBAL FOODS AND TRADITIONS INTO CAFETERIAS, CLASSROOMS, AND GARDENS

SCHOOLS AND NATIVE AMERICAN TRIBES across the country are incorporating traditional foods like bison, mesquite flour, wild rice, and ancient varieties of squash and corn into school meals and providing complementary educational activities that teach students about nutrition and Native American food traditions. There are more than 560 tribes recognized by the U.S. government, each with its own food and agricultural history and culture. Operating a farm to school program in a tribal setting or in a school with a high Native American population can help connect students to this history and expand markets for local and Native American farmers. This fact sheet explores how school and tribes are integrating traditional foods into child nutrition programs (CNPs), buying traditional foods locally, and incorporating multicultural nutrition education into classroom curriculum and hands-on lessons in school gardens.

**Incorporating Traditional Foods into Menus**  
The United States Department of Agriculture (USDA) encourages Indian Tribal Organizations, along with all operators of CNPs, to serve traditional and locally grown and raised foods. **The Child Nutrition Programs and Traditional Foods memo (TA01-2015)** explains that traditional foods may be served in CNPs and includes examples of how several traditional foods may contribute towards reimbursable meals. The **USDA Food Buying Guide (FBG)** is a great place to start when creating menus that incorporate traditional food items since it includes crediting information and portion sizes needed to meet the nutritional standards for federal reimbursement.

**The Circle of Nations Boarding School located in Wahpeton, North Dakota, a charter under the Sisseton Wahpeton Oyate tribe, incorporates bison meat from the Intertribal Buffalo Council (ITBC) Sisseton-Wahpeton Oyate herd into lunch meals. Bison meat is substituted for ground beef in items such as chili and spaghetti sauce. In addition, food from the school garden is served daily on the salad bar. Lise Erdrich, School Health Coordinator, says that the students rated her salsa verde recipe, made with traditional green tomatillos, "better than guacamole!"**

**Meat from domesticated and wild game animals, including many traditional foods like bison and venison, may be served in child nutrition programs.**

*For information about serving meat, see the memo, Procuring Local Meat, Poultry, Game, and Eggs for Child Nutrition Programs (SP01 CACFP01 SFSP01-2016).*

While the FBG provides a list of products commonly served in CNPs, it is not comprehensive. If a food is served as part of a reimbursable meal, but not listed in the FBG, the yield information of a similar food or an in-house yield may be used to determine the contribution towards meal pattern requirements.

Since traditional foods may provide a different nutrient yield than the substitutes listed in the FBG, it is important to pay attention to preparation techniques and the nutritional content of the foods being substituted.

OFFICE of  
COMMUNITY  
FOOD SYSTEMS

[www.fns.usda.gov/cfs/tribal-foods](http://www.fns.usda.gov/cfs/tribal-foods)



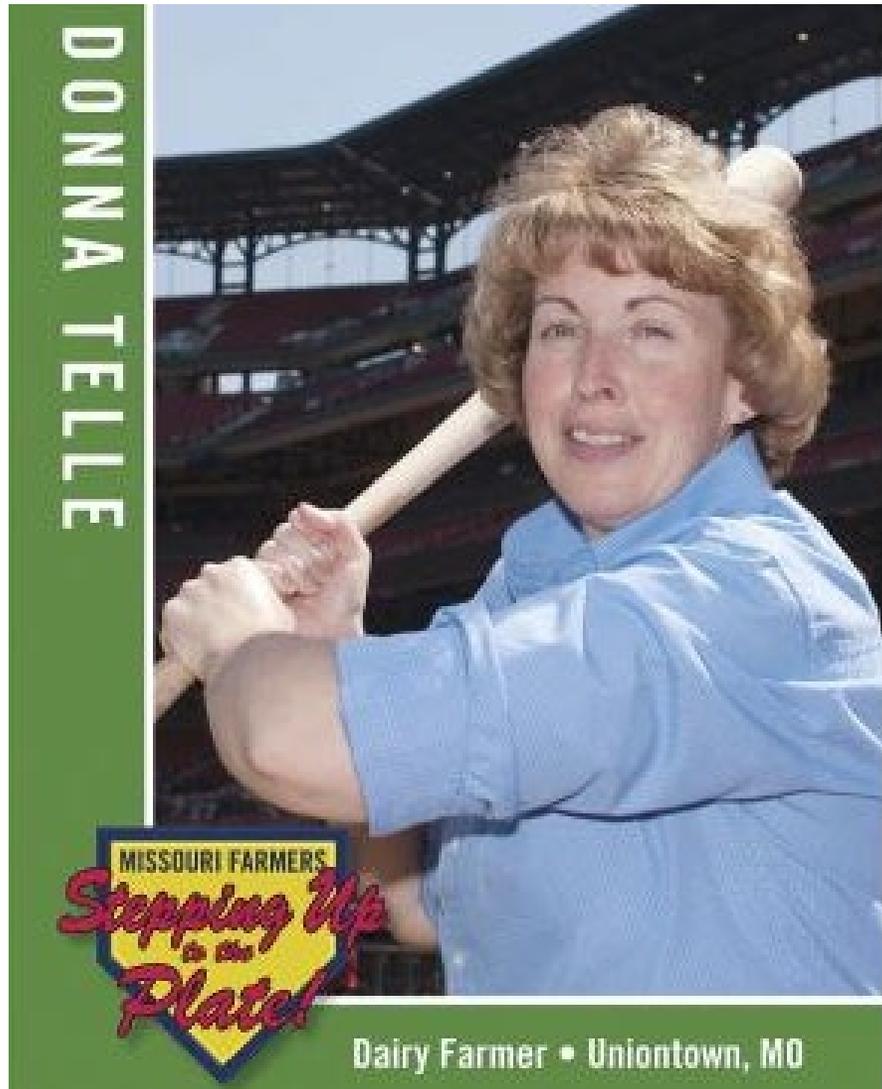
## AMERICAN INDIAN TRADITIONAL FOODS IN USDA SCHOOL MEALS PROGRAMS

A Wisconsin Farm to School Toolkit

Wisconsin Department of Public Instruction

<https://dpi.wi.gov/news/dpi-connected/traditional-foods-wisconsin>

# Farmer Trading Cards



A trading card for Donna Telle, a dairy farmer. The card features a photograph of Donna Telle, a woman with short, curly blonde hair, wearing a light blue button-down shirt. She is smiling and holding a wooden baseball bat over her shoulder. The background shows a large, dark structure, possibly a stadium or arena. On the left side of the card, the name "DONNA TELLE" is written vertically in white capital letters on a green background. At the bottom left, there is a logo for "MISSOURI FARMERS Stepping Up to the Plate!" with "Stepping Up" in red script and "to the Plate!" in red script. At the bottom right, it says "Dairy Farmer • Uniontown, MO".

"We care about continuing the tradition of family farming while producing nutrient-rich milk."

## DONNA TELLE

Raises: Holstein Dairy Cattle

Location: Uniontown, Missouri

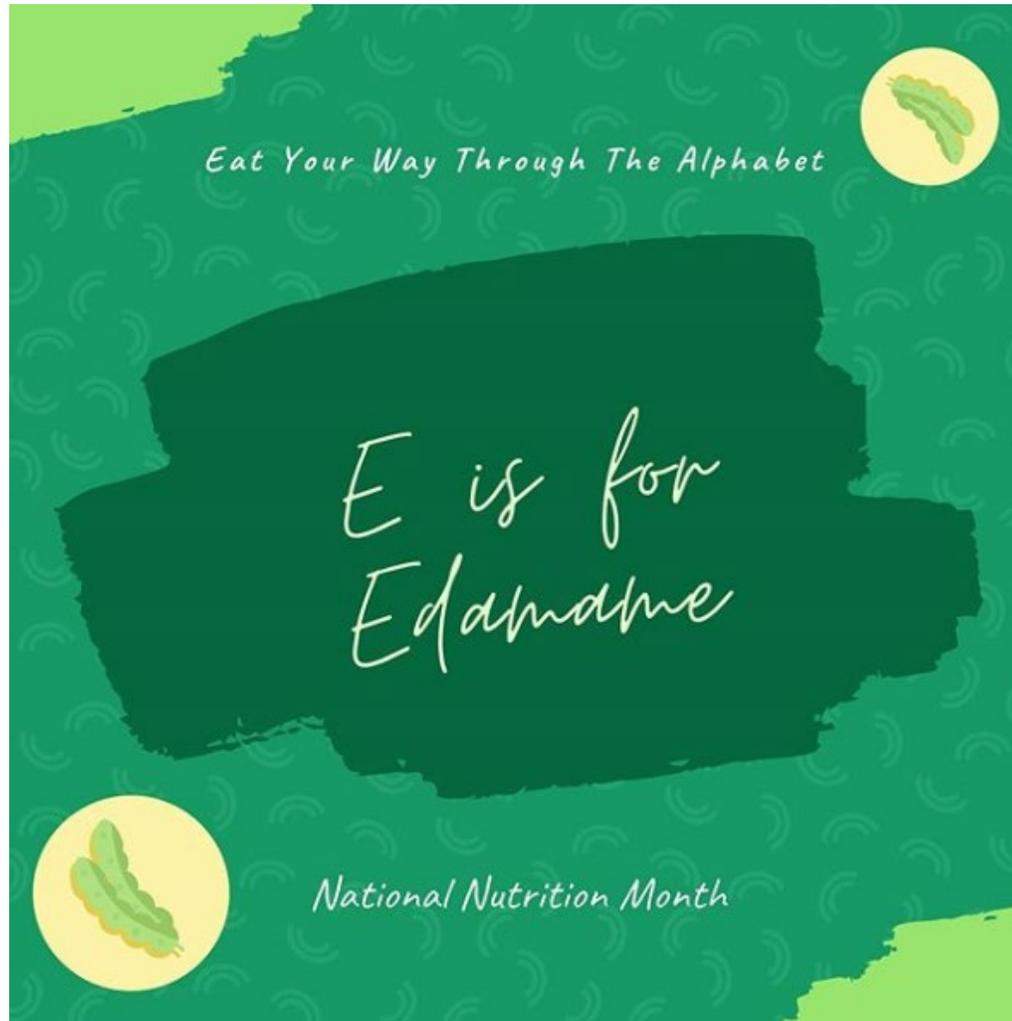
Farming for: 27 years, a 5<sup>th</sup> generation farmer (her sons are 6<sup>th</sup> generation!)

Hobbies: FFA Alumni, Perryville Pirate Athletic Club

Meet other farmers and register to win the "Ultimate At-Home Tailgate" at [FarmersFeedUs.org](http://FarmersFeedUs.org)



# Eat the Alphabet



# Cooking Classes



# Cooking Clubs: **Cookingwithkids.org**

- Cooking with Kids educates and empowers children and families to make healthy food choices through hands-on nutrition education with fresh, affordable foods.
  - How to videos
  - Cooking lessons
  - Cafeteria resources
  - Tasting Lessons

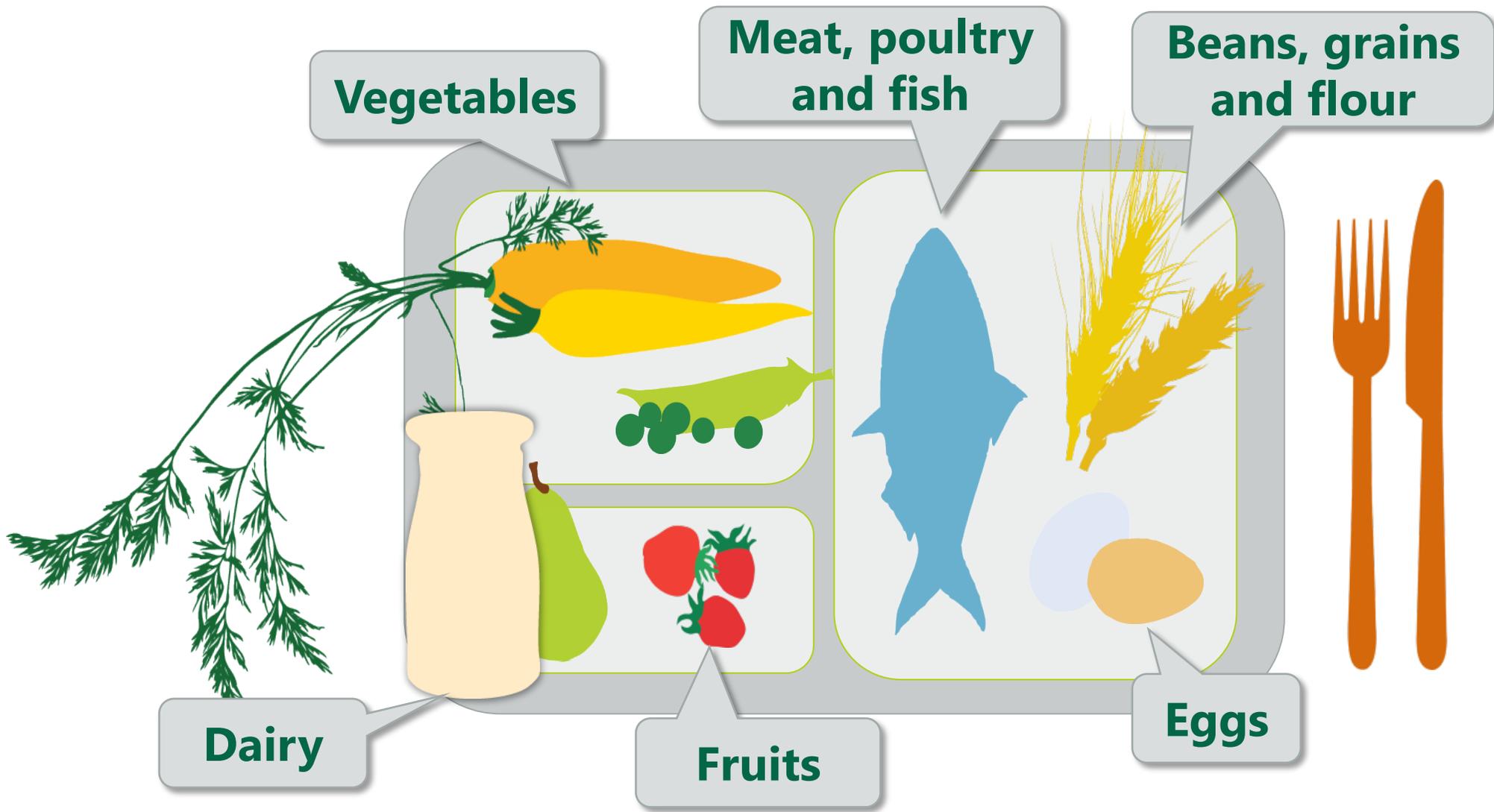


# Field Trips



# Farm-to-School Procurement





# Students Benefit

Fruit and vegetable consumption

Food choices

Academic achievement

Food education



# Benefits of Buying Local

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Supporting the local economy and local farms

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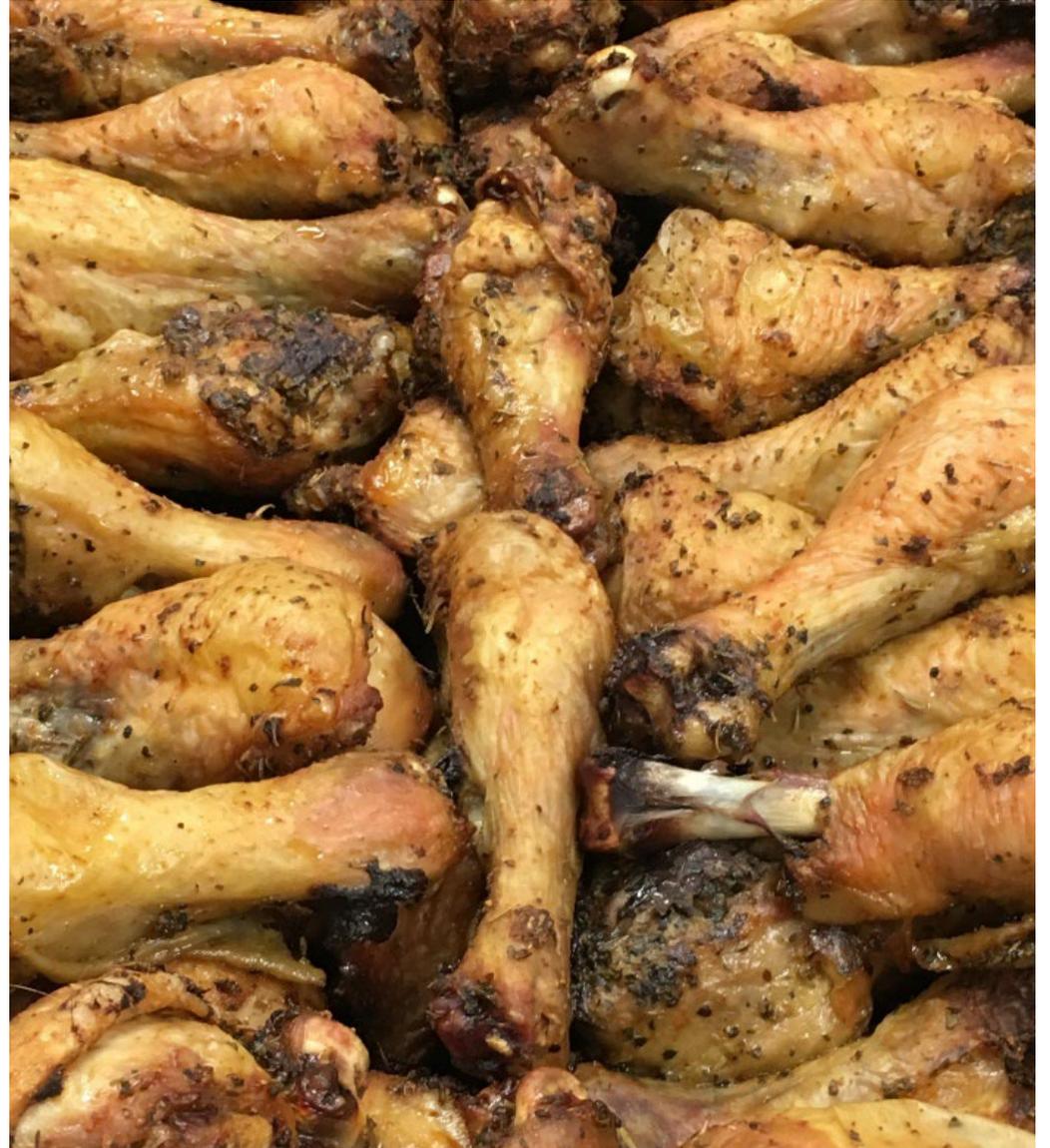
Building partnerships between the school system and community

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Lower transportation costs

---

Fulfilling student, parent and/or teacher requests for local food



# Small Steps

## Asking

- Asking your current vendor to sell local farm products

## Planning

- Planning menus around seasonal availability of local products

## Buying and highlighting

- Buying and highlighting only one or two local products each month



# Small Steps

Host

- Hosting one or two local food meals or events each school year (i.e. Indiana Food Day)

Begin

- Beginning by serving local foods on a limited or pilot basis, such as serving at only one school



# Small Steps

Begin

- Begin with one item – maybe lettuce

Look

- Look for a product unique to your area

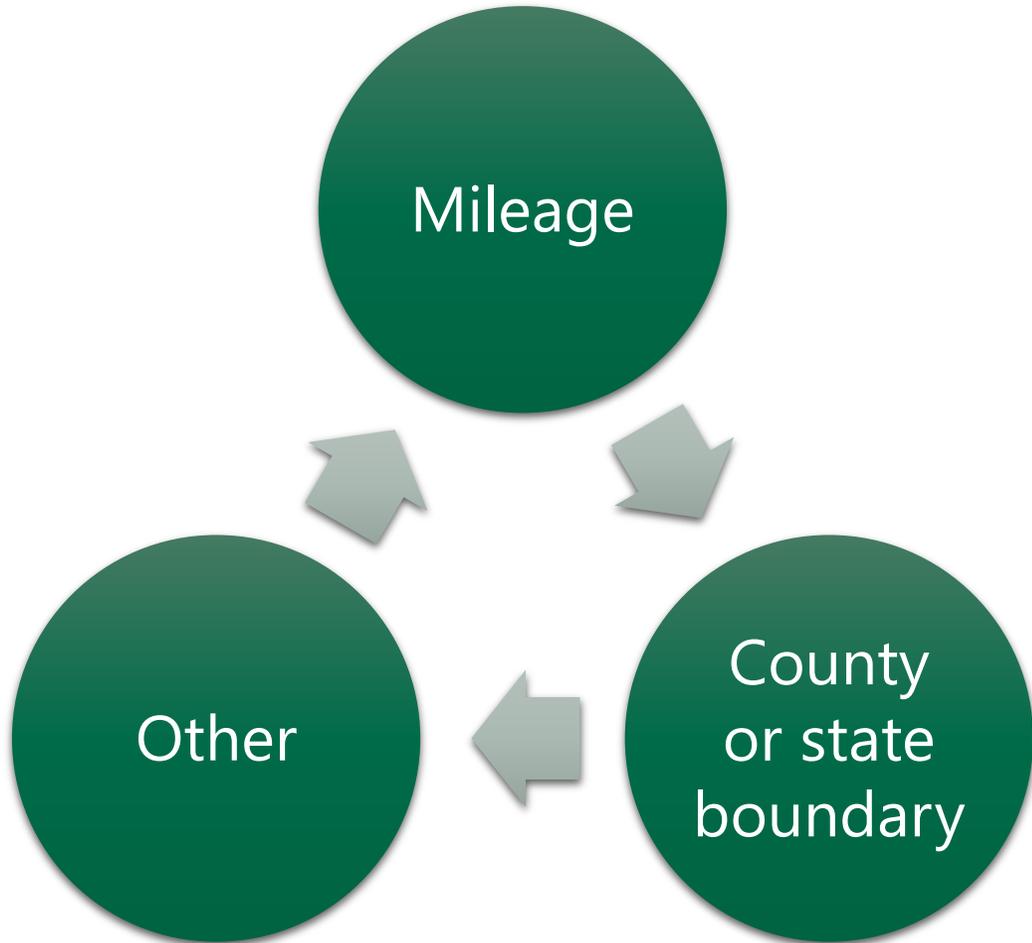
Create

- Create excitement for that one item



# Geographic Preference

How do we define local?





Culinary Institute  
of America

# Day Three





# Ingredient Versatility & Speed Scratch in School Meals



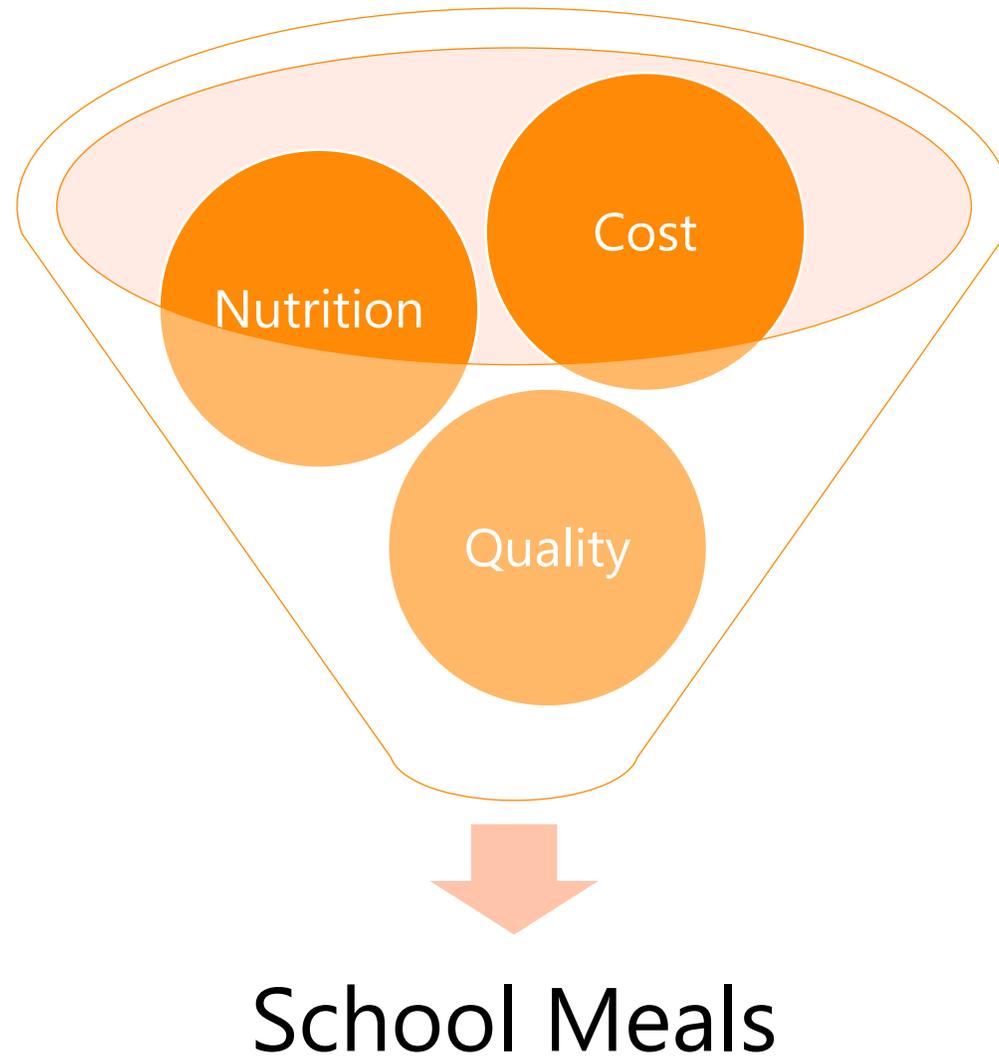
# Types of Meal Preparation

Finished or  
Convenience

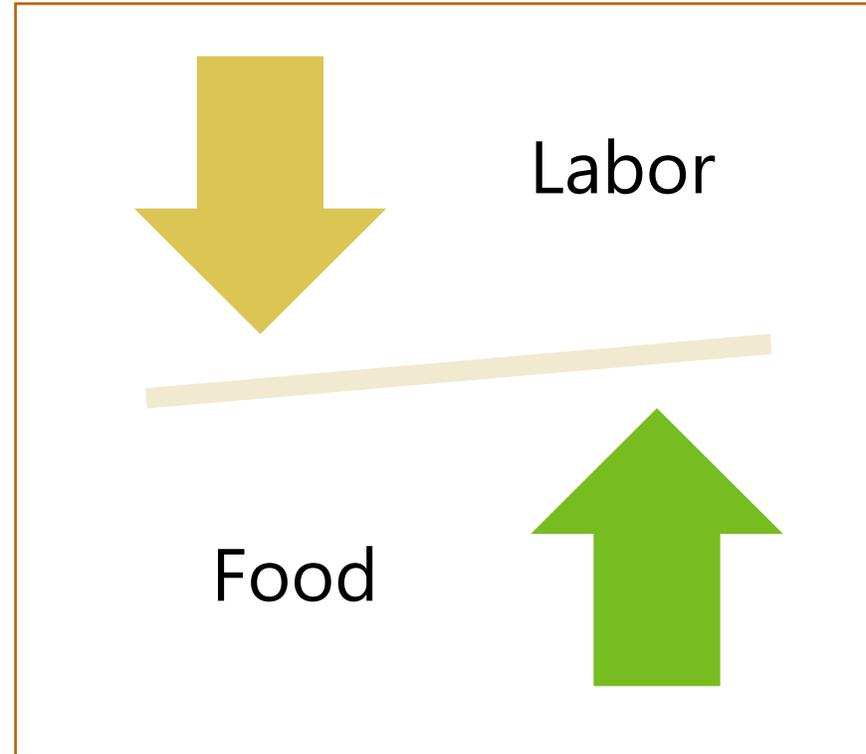
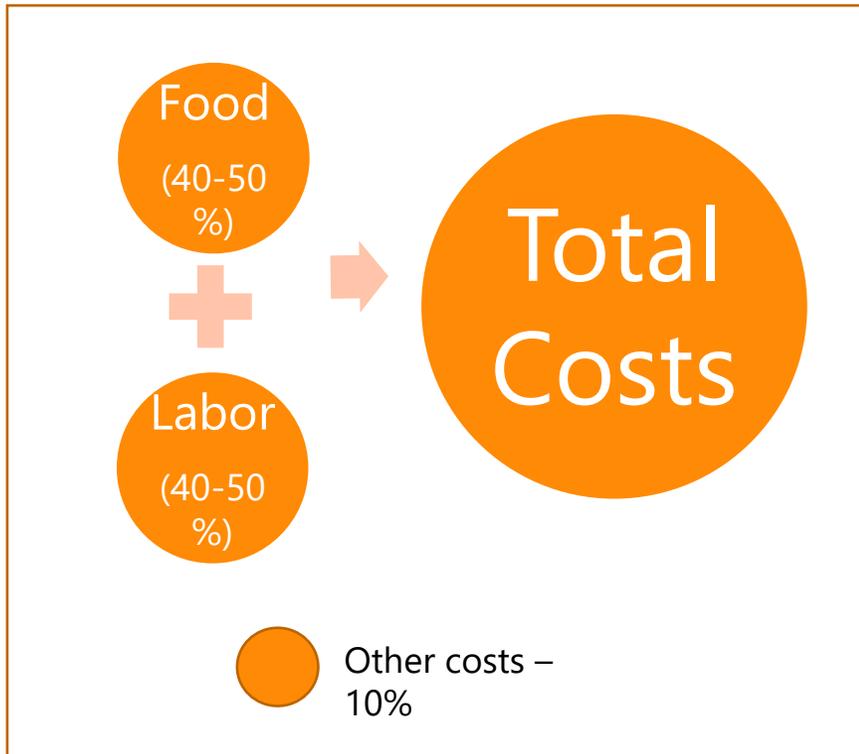
Speed  
Scratch

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

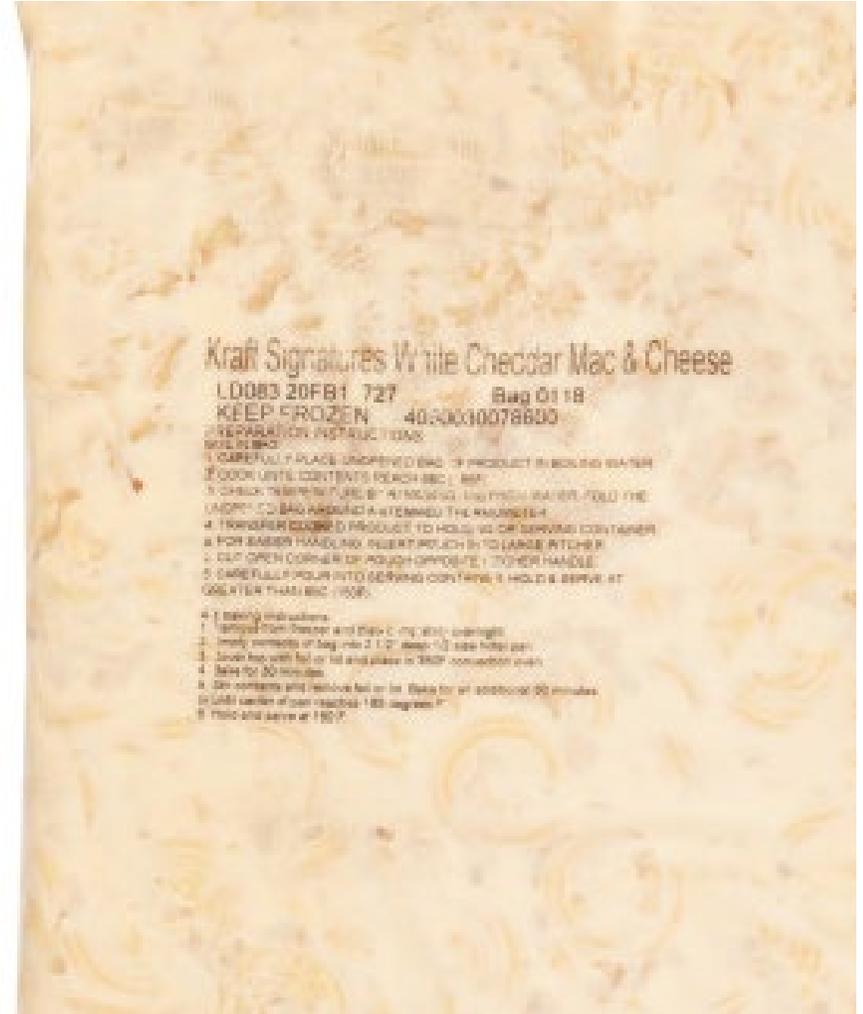
More expensive than the other meal preparation strategies

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.

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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

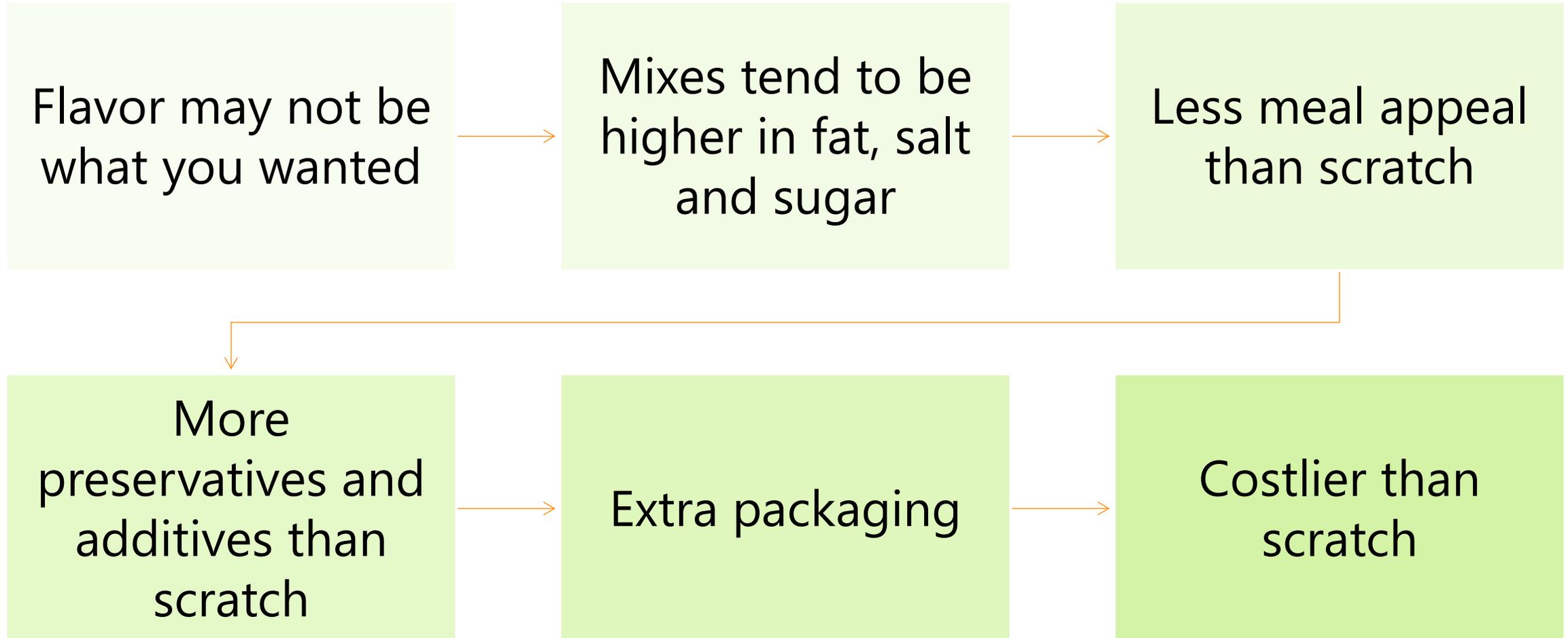
Easier for inexperienced cooks to prepare

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



# Core Ingredients

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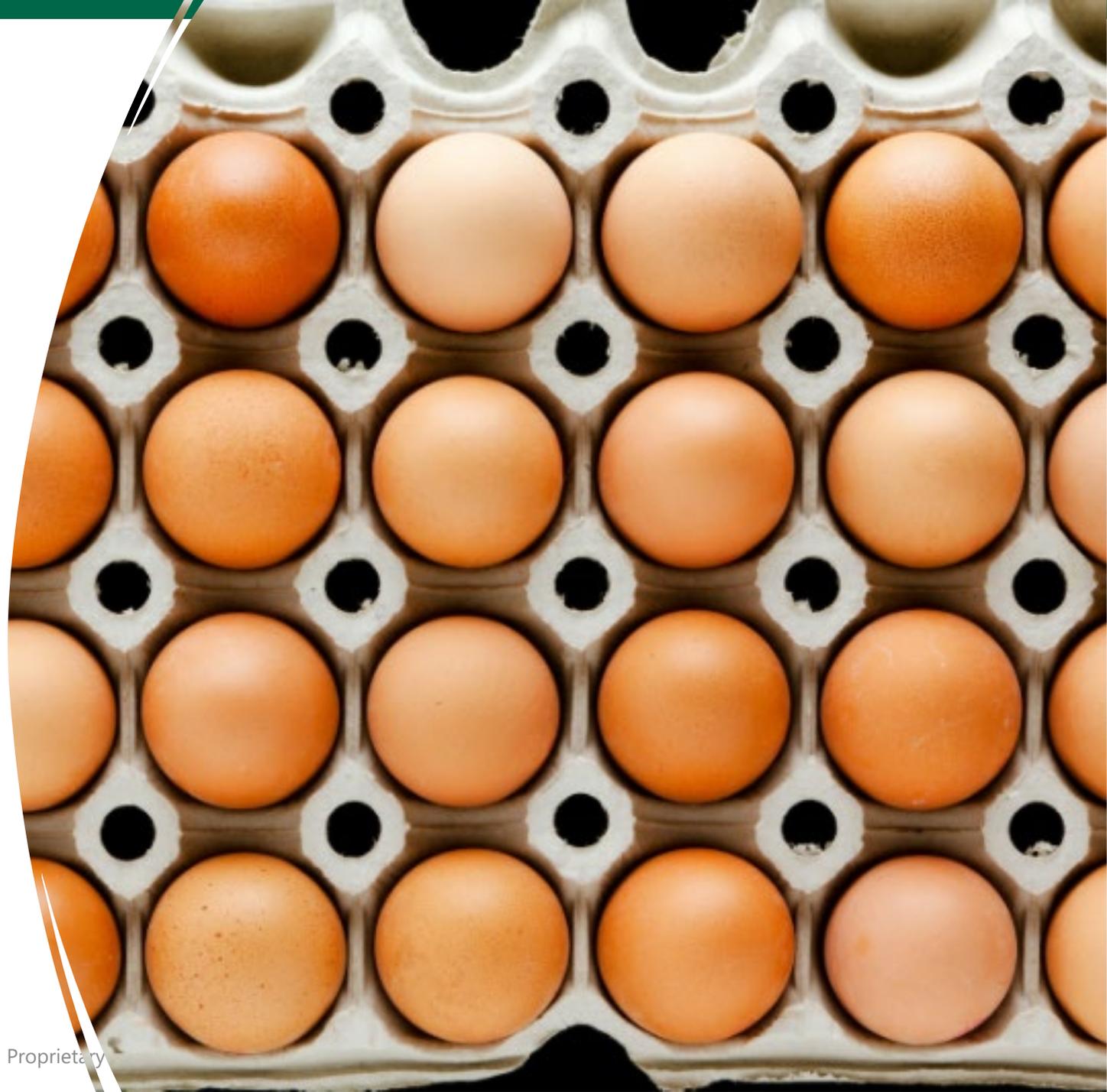
Whole ingredients

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Less processed

---

No seasonings



# Core....and more!

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Menu item flexibility

---

Customizable menu items

---

Increase global flavors

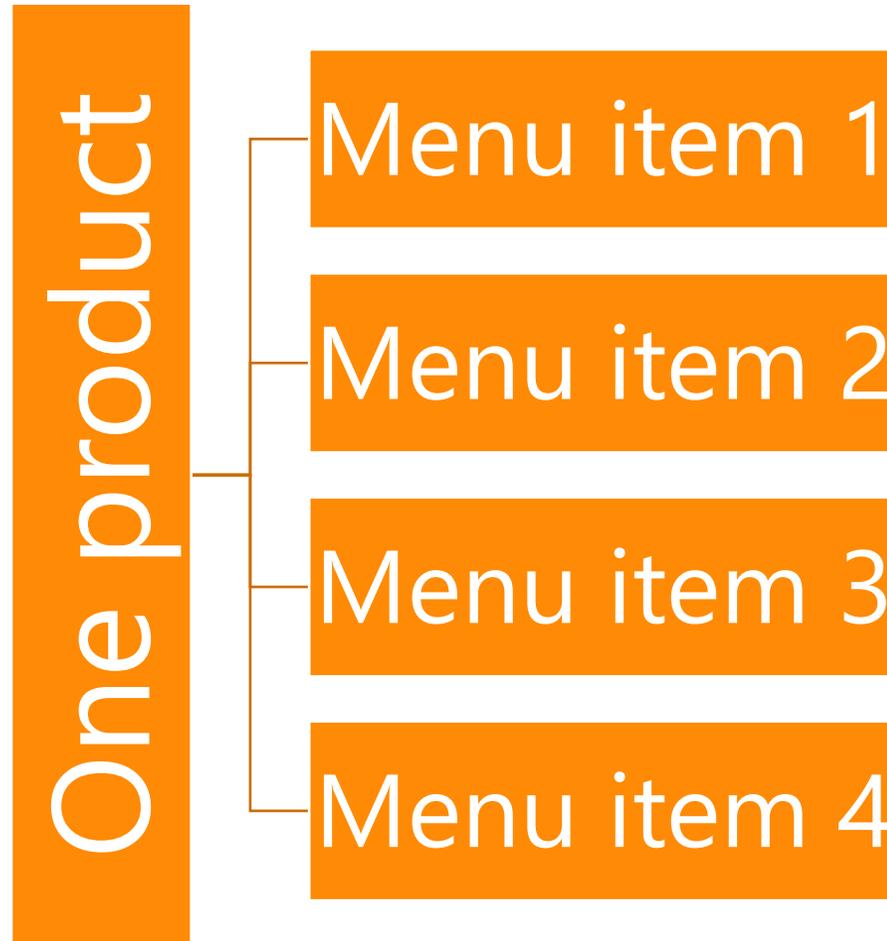
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Work across grade levels



# Minimize SKUs:

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

# Cross-Utilization: Cheese



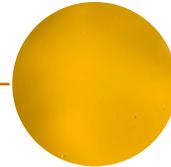
**Cheese**



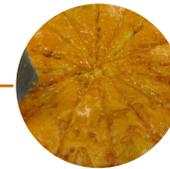
Chicken Taco



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



Spicy 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

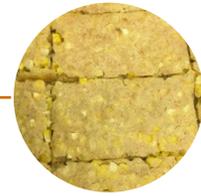


Broccoli Mac & Cheese

# Cross-Utilization: **Frozen Corn**



**Frozen Corn**



Corn Pudding



Mexicali Corn



Corn Chowder with Thyme



Corn & Sorghum Salad

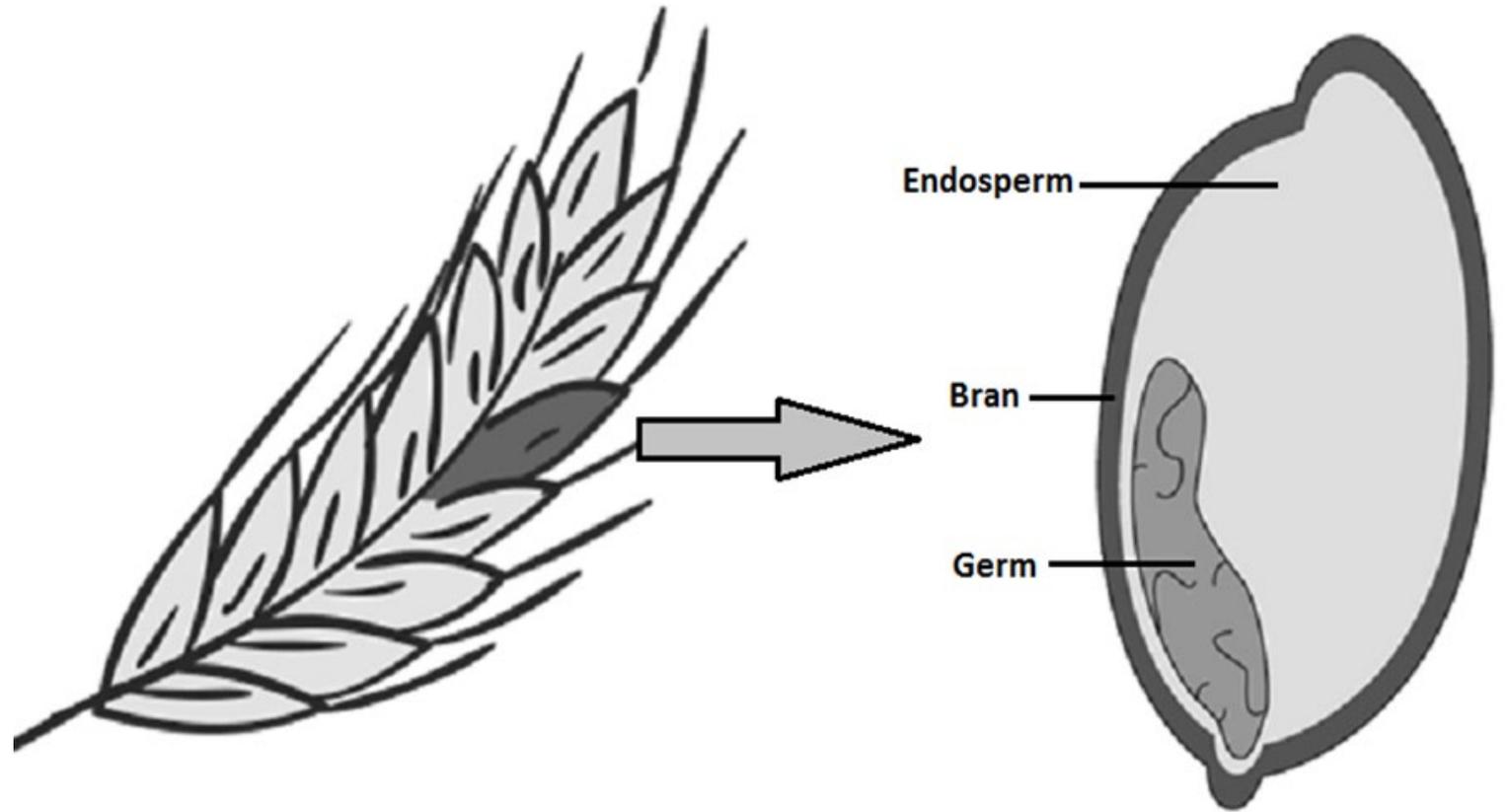


# Exploring Whole Grains



# What is an Intact Whole Grain?

- Grains that contain all three parts of the kernel – the bran, germ, and endosperm – in their original proportions
- These grains are unrefined and closely resemble their natural state



# Parts of a Whole Grain

## **Bran**

The outer skin of the kernel that helps to protect the inner kernel, It contains fiber, important antioxidants, iron, zinc, copper, magnesium, B vitamins, and phytonutrients.

## **Germ**

The embryo which, if fertilized by pollen, will sprout into a new plant. It contains B vitamins, vitamin E, antioxidants, phytonutrients, and unsaturated fats.

## **Endosperm**

The germ's food supply, which, if the grain were allowed to grow would provide essential energy to the young plant. As the largest portion of the kernel, the endosperm contains starchy carbohydrates, proteins, and small amounts of vitamins and minerals.

# WHOLE GRAIN, **WHOLE BENEFIT.**

Eat whole grains for **vitamins, minerals, and fiber.**



## **IN THE BRAN**

antioxidants, B vitamins, fiber

## **IN THE ENDOSPERM**

starchy carbohydrates,  
proteins, small amounts  
of vitamins and minerals

## **IN THE GERM**

B vitamins, protein,  
minerals, healthy fats

Whole grains **help reduce** your risk of:



**Heart Disease**



**Diabetes**



**Certain Cancers**

# EXAMPLES OF WHOLE GRAINS. TRY A NEW ONE EVERYDAY!



**AMARANTH**



**BARLEY**



**BUCKWHEAT**



**BULGUR**



**CORN**



**FARRO**



**FONIO**



**FREEKEH**



**MILLET**



**OATS**



**QUINOA**



**RICE**



**RYE**



**SORGHUM**



**TEFF**



**TRITICALE**



**WHEAT**



**WILD RICE**

# Types of Grains

## Whole

- Contain all essential parts of the grain seed– the bran, germ and endosperm

## Whole Grain Rich

- Half (50%) of the grain is whole grain

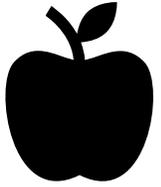
## Refined

- A process that removes the bran and germ
- Milling removes dietary fiber, iron and many B vitamins

## Enriched

- The refined grain with the iron and B vitamins added back after processing

# Fiber and Health



Recommended fiber intake: 14 grams per 1000 calories



Of the under-consumed nutrients, calcium, potassium, **dietary fiber**, and vitamin D are considered **nutrients of public health concern** because low intakes are associated with health concerns.



Low intakes of dietary fiber are due to low intakes of vegetables, fruits, and **whole grains**.



Research indicates possible protective effects of dietary fiber against: colon cancer, heart disease, and diabetes

# Soluble Fiber

Attracts water and turns to gel during digestion.

Binds with cholesterol compounds transporting them out of the body.

## Sources

- Oat bran
- Barley
- Nuts
- Seeds
- Beans
- Lentils
- Some fruits and vegetables



# Insoluble Fiber

Adds bulk to stool and helps food pass through digestion more quickly.

## Sources

- Wheat bran
- Whole grains
- Seeds
- Nuts
- Fruit and vegetable (peel)



# Nutrients in Whole Grains

## Vitamins

- B vitamins
- Folate

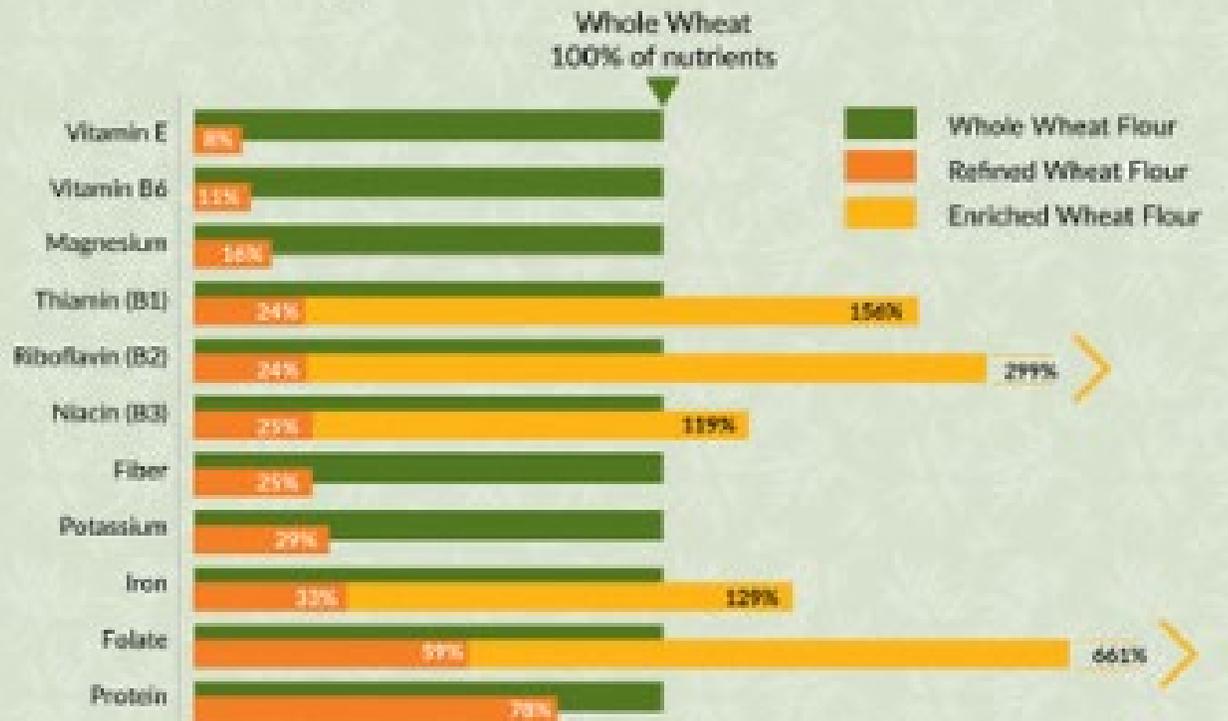
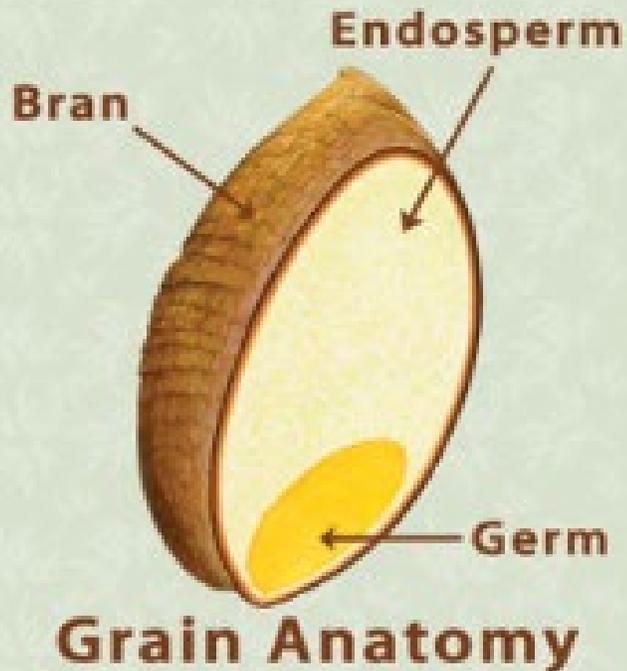
## Minerals

- Iron
- Magnesium
- Selenium



# WHOLE GRAINS 101

Whole grains are healthier, with more fiber, more protein, and higher levels of many essential nutrients. Most of the grain kernel's nutrients—and flavor—are in the bran and germ, which are routinely stripped out to make white flour.



# B Vitamins & Folate

Play a key role in metabolism; help body release energy from protein, fat, carbohydrates

Essential for a healthy nervous system



# Iron

Used to carry oxygen in the blood

Whole grains and fortified grains are a major source of non-heme iron

Vitamin C will improve absorption on non-heme iron



## Magnesium

- Build bones
- Release energy from muscles

## Selenium

- Protects cells from oxidation
- Important for healthy immune system.



# Health Benefits of Whole Grains

1

Consuming whole grains as part of a healthy diet may **reduce the risk of heart disease**

2

Consuming whole grain foods that contain **fiber**, as part of an overall healthy diet, can support **healthy digestion**

3

Eating whole grains, as part of an overall healthy diet, may help with **weight management**

4

Eating grain products **fortified with folate** helps prevent **neural tube defects** when consumed as part of an overall healthy diet **before and during pregnancy**





Culinary Institute  
of America

# Day Four





# Flavor Enhancers: Herbs, Spices, Culinary Acids



# 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



# 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



# Smell

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



# Sight

Colors



Shapes



Consistency



Moisture



# Sound

Crunch

Crackle

Sizzle

Squeaky

Carbonation



# 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*

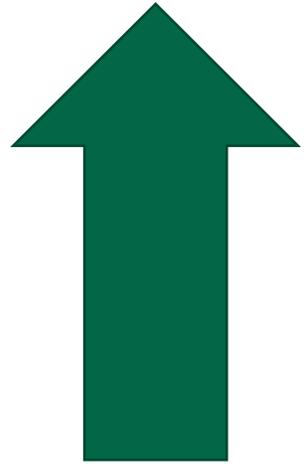


# Super-Tasters

- 25% more taste buds
- Genetic
- Sensitive to bitter, fatty and strong flavors
- Of total population: 30% women, 15% men are super-tasters
- Chemical test



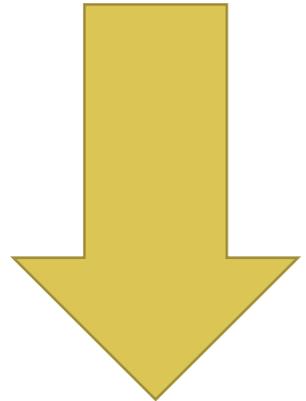
# Children's Taste Preference



Sweet

Salty

Sour



Bitter





# 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 US

Americans consume substantially more sodium than recommended, more than 3400 mg of sodium daily



# Sodium Intake Recommendations

The Dietary Guidelines for Americans recommend limiting sodium to less than **2300** mg per day.

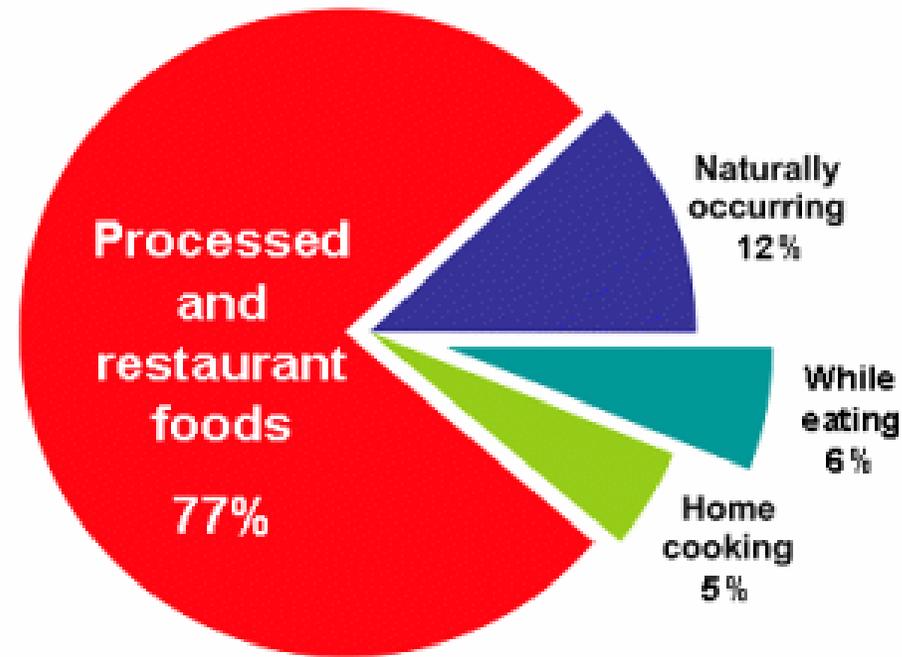
# Comparison Chart of the 2023 Proposed and 2024 Final Rule Requirements for School Meal Programs

Sodium		
Legend: ✓ = proposal was finalized ; ✗ = proposal was not finalized; → = revisions made to the proposal		
Provision	Proposed Rule	Final Rule
School Lunch	<p>Proposed the following sodium reductions for school lunch:</p> <ul style="list-style-type: none"> <li>Three 10% reductions in SY 2025-26, SY 2027-28, and SY 2029-30 (30% reduction total).</li> </ul>	<p>→ Does not finalize proposed sodium limits at lunch.</p> <p><b>Maintains current sodium limit, Sodium Target 1A, at lunch through June 30, 2027.</b></p> <p><b>Finalizes one 15% sodium reduction from current limit for school lunch, which schools must implement by July 1, 2027.</b></p>

Age/Grade Group	Target 1	Target 1A Maintain through 7/30/27	Target 2 Must be implemented by July 1, 2027)
K-5	≤ 1230	≤ 1110	≤ 935
6-8	≤ 1360	≤ 1225	≤ 1035
9-12	≤ 1420	≤ 1280	≤ 1080

# Where does our sodium come from?

## Most Sodium Comes from Processed and Restaurant Foods



Sources: The Center for Science in the Public Interest, <http://www.cspinet.org/salt/SaltSources.pdf> Accessed September 23, 2013

# 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 % \*

<b>Total Fat</b> 9g	<b>12%</b>
Saturated Fat 4.5g	<b>23%</b>
Trans Fat 0g	
<b>Cholesterol</b> 25mg	<b>8%</b>
<b>Sodium</b> 510mg	<b>22%</b>
<b>Total Carbohydrate</b> 30g	<b>11%</b>
Dietary Fiber 3g	<b>11%</b>
Total Sugars 3g	
Includes 3g Added Sugars	<b>6%</b>
<b>Protein</b> 11g	
Vitamin D MC	<b>0%</b>
Calcium mg	<b>10%</b>
Iron mg	<b>10%</b>
Potassium mg	<b>4%</b>

\*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

<b>Label term</b>	<b>Definition</b>
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
<b>Sodium citrate</b>	<b>Buffer used to control acidity in soft drinks</b>
Sodium nitrite	Curing agent in meat
Sodium phosphate	Emulsifier and stabilizer
Sodium propionate	Mold inhibitor
Sodium saccharin	Artificial sweetener

# Hidden Salt



Parilla's Classic Soups  
Traditional  
Chicken & Rice  
SOUP

Many foods pack a lot more salt than you think.

TOO MUCH SALT CAN LEAD TO HEART ATTACK AND STROKE

Compare Labels. Choose Less Sodium.

To learn more about salt call 311. **NYC** Health

Michael R. Bloomberg  
Mayor  
Thomas Farley, M.D.,  
Commissioner

Made possible by funding from the Department of Health and Human Services.



# 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?

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

## Answer:

- **Lowfat 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

<b>Table salt</b>	<b>50 portions</b>	<b>100 portions</b>
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)
<b>Table salt</b>	1 teaspoon	6 grams	2300
<b>Diamond Crystal kosher salt</b>	<b>1 teaspoon</b>	<b>2.8 grams</b>	<b>1120</b>
<b>Diamond Crystal sea salt</b>	1 teaspoon	5.6 grams	2160
<b>Morton kosher salt</b>	1 teaspoon	4.8 grams	1920
<b>Morton sea salt</b>	1 teaspoon	5.6 grams	2240
<b>Diamond Crystal Salt Sense</b> <i>Ingredients: salt, silicon dioxide, tricalcium phosphate, sodium bicarbonate, dextrose, potassium iodine</i>	1 teaspoon	4 grams	1560
<b>Morton Salt Substitute</b> <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
<b>Garlic salt</b>	<b>1960</b>
Onion powder	0
<b>Onion salt</b>	<b>1800</b>
Black pepper	0
Paprika	0
Cumin	5



# Make Your Own Spice Blend



## SEASONINGS BLENDS

Yield: 1 quart

<b>Mexican</b> <i>adapted from USDA Recipe, Mexican Seasoning Mix, G-01A</i>	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	<b>Barbecue</b>	Onion powder Garlic, granulated Paprika, smoked Cumin, ground Black pepper	1 cup 1 cup 7/8 cup 7/8 cup ¼ cup
<b>Buffalo</b>	Onion powder Garlic, granulated Paprika Chili pepper Red pepper	1 cup 1 ¼ cup ¼ cup 1 ¼ cup ¼ cup	<b>Ranch</b>	Garlic, granulated Onion powder Dill weed Black pepper	1 ¼ cup 1 ¼ cup 1 ¼ cup ¼ cup
<b>Italian</b> <i>adapted from USDA recipe, Italian Seasoning Mix, G-01</i>	Basil, dried Oregano, dried Marjoram, dried Thyme, dried	1 1/3 cup 1/3 cup 1 cup 1/3 cup	<b>Parmesan-Rosemary</b>	Garlic, granulated Rosemary, crushed Parmesan cheese	½ cup ¾ cup 2 ¾ cups
<b>Caribbean Spice</b>	Ginger, ground Black pepper, ground Orange peel, dried, ground Mace, ground Cloves, ground Brown sugar	1 cup 1 cup 7/8 cup 1 tablespoon 1 tablespoon 1 cup	<b>Spice Rub</b>	Onion powder Garlic, granulated Paprika Cumin, ground Chili powder Black pepper Brown sugar	5/8 cup 5/8 cup 5/8 cup 5/8 cup 5/8 cup 2 tablespoons ¾ cup
<b>Garlic &amp; Herb</b>	Granulated onion Garlic, granulated Paprika Oregano leaves Thyme leaves	1/3 cup 2/3 cup 1 cup 1 cup 1 cup	<b>Tandoori</b>	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

# Seasoning Blends

Spice or Herb	Mexican	Buffalo	Italian	BBQ	Ranch	Tandoori
<b>Garlic, granulated</b>	1/3 cup	1 1/4 cup	1 cup	1 cup	1 1/4 cup	
<b>Onion powder</b>	1/3 cup	1 cup		1 cup	1 1/4 cup	
<b>Cumin</b>	1 1/4 cup			7/8 cup		2/3 cup
<b>Paprika</b>		1/4 cup				2/3 cup
<b>Paprika, smoked</b>	1/3 cup			7/8 cup		
<b>Chili powder</b>	1 3/4 cup	1 1/4 cup				
<b>Pepper, black</b>				1/4 cup	1/4 cup	
Red pepper, ground		1/4 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 1/4 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



**Best If Used By**

Try Our Other Varieties!

**DEP BOX TOP EDUCATION**  
EXPIRES 11/1/21

visit us at [www.OLDELPASO.com](http://www.OLDELPASO.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, 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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Partially Produced with Genetic Engineering

Learn more at Ask.GeneralMills.com

**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.

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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



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visit us at [www.OLDELPASO.com](http://www.OLDELPASO.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.

© General Mills 3251521115

**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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Contains Bioengineered Food Ingredients

Learn more at Ask.GeneralMills.com

**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.

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**Ingredients:** corn starch, maltodextrin, chili pepper, onion powder, salt, spice, sea salt.....

# Compare Brands: **Ketchup**

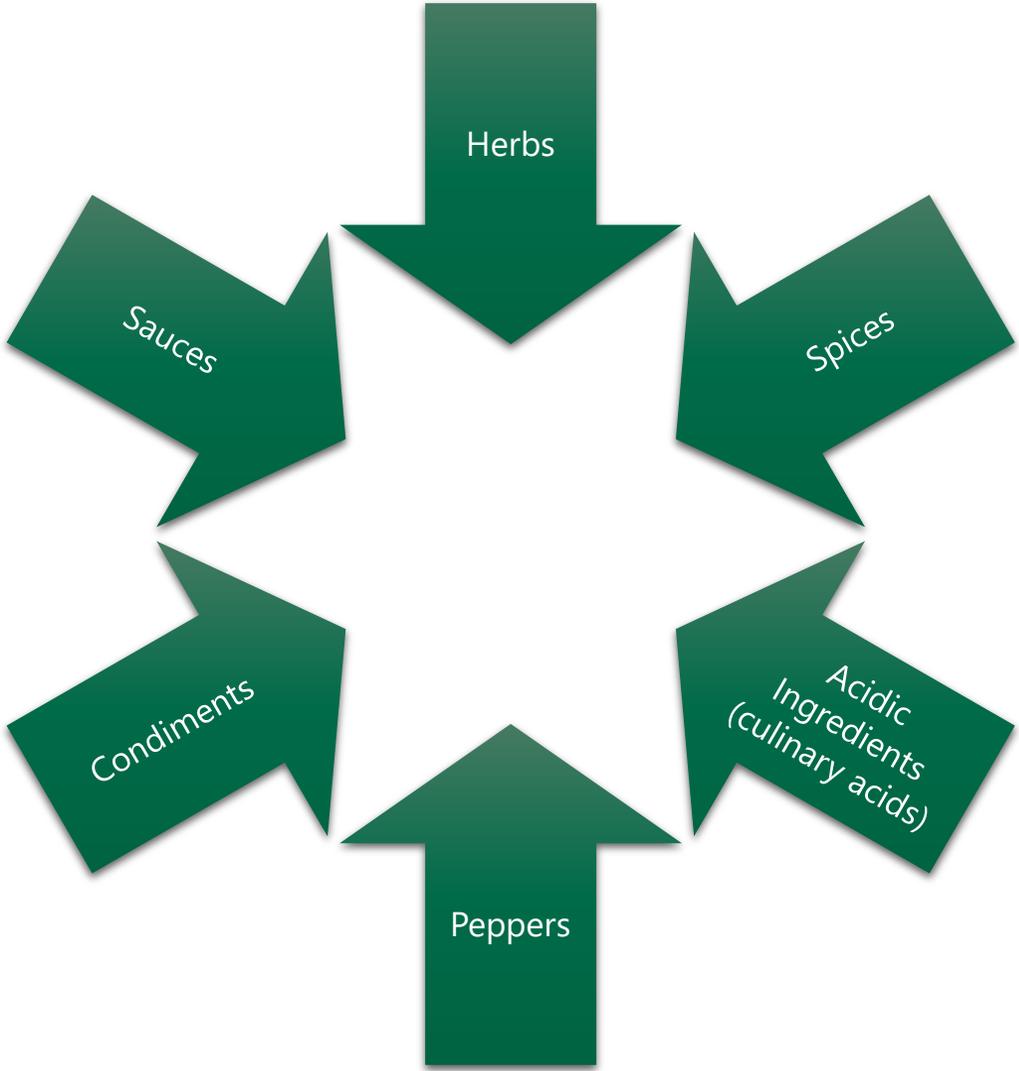
Condiment	Sodium per 2 tablespoon
Heinz	320
Hunt's	360
Del Monte	380
Red Gold	160
Red Gold Naturally Balanced	100



# Seasoning Primer



# Seasonings or Flavorings



# Herbs



Fresh Herbs



Dried Herbs



Pestos 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





# Added Sugars



# Dietary Guidelines for Americans 2020-2025

Follow	Follow a healthy eating pattern across the lifespan
Customize and enjoy	Customize and enjoy food and beverage choices
Focus on	Focus on meeting food group needs and stay within calorie limits
Limit	Limit food and beverages higher in <u>added sugars</u> , saturated fat, and sodium



# Reducing Sugars

**Americans** are eating and drinking **too much added sugars** which can lead to health problems such as **weight gain** and **obesity, type 2 diabetes,** and **heart disease.**

About **40% of children and adolescents** are **overweight** or have **obesity**; the rate of obesity increases throughout childhood and teen years

School breakfast offers protection from obesity



# 10% of the Calories from Sugar in our Diets

Total Calories	10% Calories from Sugar	4 calories in a gram of sugar	Sugar (grams)
2000 x.10	= 200	÷ 4	= 50 grams sugar

- Food labels: 4 grams of sugar = 1 teaspoon
- 1 – 12 oz. can of cola contains 39 grams of added sugar
  - Almost 10 tsp of sugar!
- That's 156 empty calories!

# 10% of the Calories from Sugar in School Meals

	Calories (maximum)	10% Calories from Sugar	Sugar (grams)
Breakfast			
K-5	500	50	<b>12.5</b>
6-8	550	55	<b>13.75</b>
9-12	600	60	<b>15</b>
Lunch			
K-5	650	65	<b>16.25</b>
6-8	700	70	<b>17.5</b>
9-12	850	85	<b>21.25</b>

4 gm sugar = 1 tsp

# Sugars on the Label

<b>Nutrition Facts</b>	
8 servings per container	
<b>Serving size 8 fl oz (240mL)</b>	
<b>Amount per serving</b>	
<b>Calories</b>	<b>110</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 0g	<b>0%</b>
Saturated Fat 0g	<b>0%</b>
Trans Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 5mg	<b>0%</b>
<b>Total Carbohydrate</b> 27g	<b>10%</b>
Dietary Fiber 0g	<b>0%</b>
<b>Total Sugars</b> 25g	
Includes 23g Added Sugars	<b>46%</b>
<b>Protein</b> 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 40mg	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.

## Total Sugars

Includes sugars naturally present in many foods and beverages, such as sugar in milk and fruits as well as any added sugars that may be present in the product.

## Added Sugars

Includes sugars that are added during the processing of foods (such as sucrose or dextrose), foods packaged as sweeteners (such as table sugar), sugars from syrups and honey, and sugars from concentrated fruit or vegetable juices. They do not include naturally occurring sugars that are found in milk, fruits, and vegetables.

The Daily Value for added sugars is 50 grams per day based on a 2,000 calorie daily diet.

**Source:** [www.fda.gov/food/new-nutrition-facts-label/added-sugars-new-nutrition-facts-label](http://www.fda.gov/food/new-nutrition-facts-label/added-sugars-new-nutrition-facts-label)



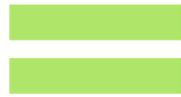
# What is in a Name?

Brown sugar	Corn sweetener	Corn syrup
Fruit juice concentrates	High-fructose corn syrup	Honey
Invert sugar	Malt sugar	Molasses
Raw sugar	Sugar	Syrup

- Dextrose
- Fructose
- Glucose
- Lactose
- Maltose
- Sucrose

# Added Sugars

1 teaspoon  
granulated  
sugar



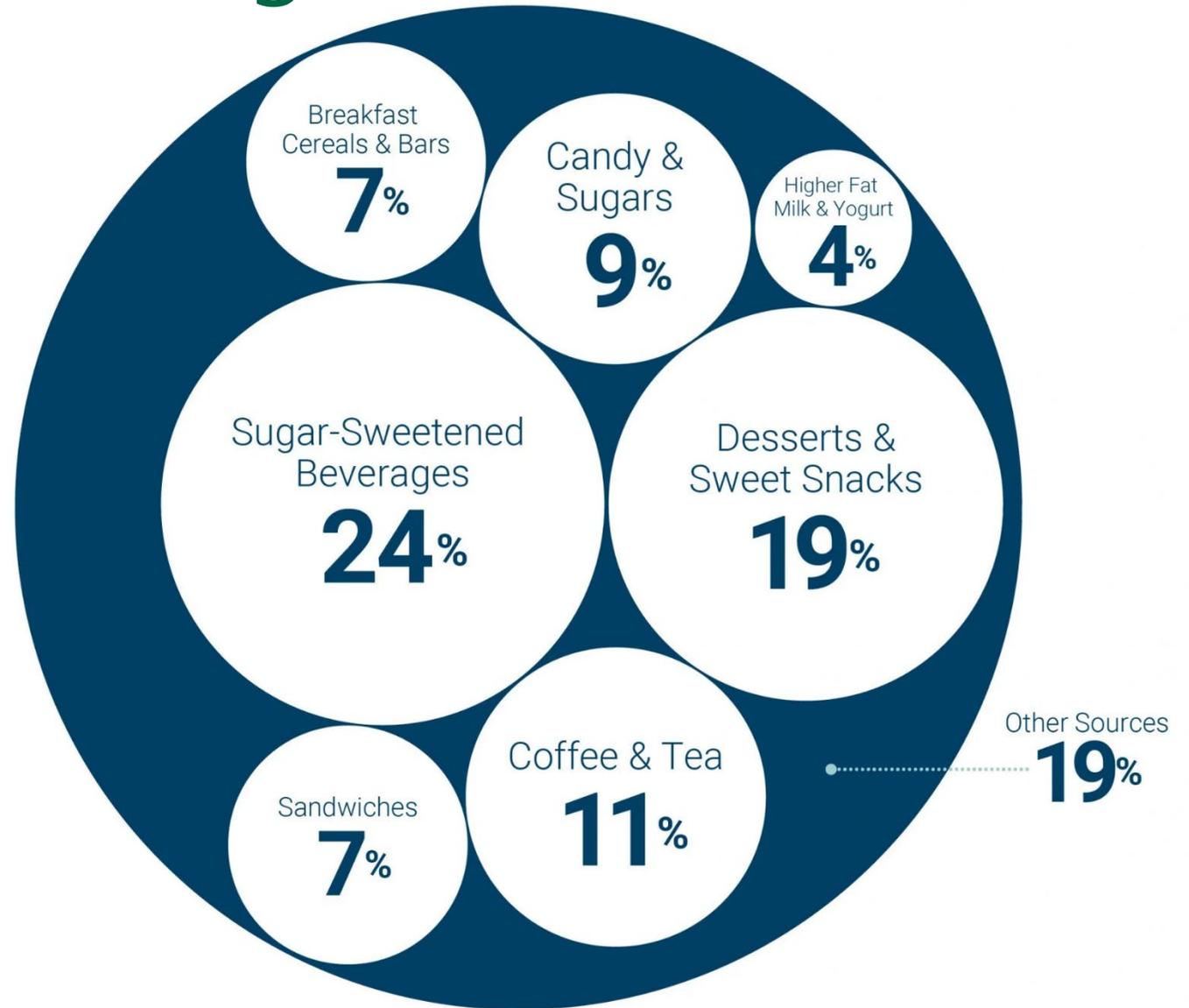
4 grams of  
sugar

- 1 fruit flavored yogurt contains 13g added sugar
- This equals 3 teaspoons worth of granulated sugar



# Food Sources of Added Sugar

Where is sugar in our diets?



# Soda and Sugar

*Pay attention to portion size.*

Portion	Calories	Added Sugar (gm)
8 ounces	100	23
12 ounces	140	34
20 ounces	240	56
32 ounces	380	90
64 ounces	760	180



# Rethink Your Drink

## Whole Fruit Comparison to 100% Fruit Juice

Meet nutritional needs primarily from nutrient-dense foods and beverages

	Orange (1 cup) 	Orange Juice (1 cup) 	Apple (1 cup) 	Apple Juice (8 fl oz.) 	Grapes (1 cup) 	Grape Juice (8 fl oz) 
<b>Calories:</b>	85 kcals	112 kcals	65 kcals	120 kcals	104 kcals	160 kcals
<b>Sugar:</b>	14 g	21 g	13 g	24 g	23 g	36 g
<b>Fiber:</b>	3.3 g	0 g	3 g	0 g	1.4 g	0 g
<b>Vitamin C:</b>	98 mg	85 mg	6 mg	83 mg	5 mg	45 mg
<b>Calcium:</b>	70 mg	260 mg	7.5 mg	13 mg	15 mg	26 mg
<b>Potassium:</b>	275 mg	350 mg	135 mg	0 g	288 mg	0 g

# Benefits of Whole Fruit

At least half of the recommended amount of fruit should come from whole fruit, rather than 100% juice



# Top 10

## Sources of Added Sugars at School Breakfast

Data from the USDA School Nutrition and Meal Cost Study showed that flavored milk, ready-to-eat cereals, and condiments and toppings are among the top sources of added sugars at school breakfast.<sup>2</sup>



**1**  
**Flavored Fat-Free (skim) Milk**



**2**  
**Sweetened Ready-to-Eat Breakfast Cereal**



**3**  
**Syrups, Frostings, and Other Condiments and Toppings**



**4**  
**Muffins and Sweet/Quick Breads**



**5**  
**Granola Bars and Breakfast Bars**



**6**  
**Toaster Pastries**



**7**  
**Pancakes, Waffles, and French Toast**



**8**  
**Sweet Crackers**  
(e.g., graham crackers, animal crackers, etc.)



**9**  
**Cinnamon Buns**



**10**  
**Sweetened Yogurt**

# Added Sugar: Breakfast



One Toaster Pastry equals one ounce equivalents of grain.

Pop-Tarts® Made with Whole Grain Frosted Blueberry, 2 ct

Equivalent to 7 tsp. of sugar!

<b>Nutrition Facts</b>	
6 servings per container	
<b>Serving size</b>	<b>1 Pouch (96g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>340</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 5g	<b>6%</b>
Saturated Fat 1.5g	<b>8%</b>
Trans Fat 0g	
Polyunsaturated Fat 2g	
Monounsaturated Fat 1g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 350mg	<b>15%</b>
<b>Total Carbohydrate</b> 73g	<b>27%</b>
Dietary Fiber 5g	<b>19%</b>
<b>Total Sugars</b> 29g	
Includes 28g Added Sugars	<b>56%</b>
<b>Protein</b> 4g	
Vitamin D 0mcg 0%	• Calcium 270mg 20%
Iron 3.7mg 20%	• Potassium 110mg 2%
Vitamin A 20%	• Thiamin 20%
Riboflavin 20%	• Niacin 20%
Vitamin B <sub>6</sub> 20%	

\* 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.

# Added Sugar: Breakfast



**Equivalent to about  
5 tsp. of sugar!**

## Nutrition Facts

Serving Size

1 Container (56g)

As  
Packaged

Calories

**210**

% DV

<b>Total Fat</b>	2.5g	3%
Saturated Fat	0.5g	3%
Trans Fat	0g	
<b>Cholesterol</b>	0mg	0%
<b>Sodium</b>	320mg	14%
<b>Total Carbohydrate</b>	45g	16%
Dietary Fiber	4g	14%
Soluble Fiber	1g	
<b>Total Sugars</b>	19g	
Incl. Added Sugars	19g	38%
<b>Protein</b>	5g	
<b>Vitamin D</b>		15%
<b>Calcium</b>		15%
<b>Iron</b>		30%
<b>Potassium</b>		4%

# Added Sugar: Breakfast

<b>Food</b>	<b>Portion</b>	<b>Calories</b>	<b>Total Sugar</b>	<b>Added Sugar</b>
Plain yogurt, lowfat	1 cup	150	17	0
Fruit flavored yogurt	1 cup	200	26	17
Milk, lowfat	1 cup	100	12	0
Chocolate milk, lowfat, reduced sugar	1 cup	140	18	6
Oatmeal	1 cup	170	1	0
Instant oatmeal	1 cup	320	22	16
Fruit juice	1 cup	110	21	0
Fruit drink	1 cup	120	27	27



# How Do We Reduce Sugar in School Breakfasts?



# Switch to Savory



# Switch to School-Made

This will allow you to reduce the amount of sugar in the recipe compared to premade



# Use the Natural Sweetness of Fruits

Fruit Puree

Unsweetened  
Applesauce

Banana Puree

Prune Puree

Dates



# Use "Sweet" Spices

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Cinnamon

---

Allspice

---

Vanilla

---

Chinese 5 spice

