

# ACDA ANNUAL CONFERENCE

**Coming Together to Nourish the Nation**



**April 21 - 24, 2024**  
**Marriott St. Louis Grand**  
**St. Louis, Missouri**

# Recipe Reverse Engineering: Maximizing Value from Pack Sizes



# Today's Speakers



**Chef Patrick Garmong**  
Associate Director of Culinary  
Education and Training  
Institute of Child Nutrition



**Chef Chela Cooper**  
Regional Culinary Implementation  
Specialist, MARO  
Institute of Child Nutrition



CICN Webinar Series



MixUp Podcast

# Culinary Quick Bites

Onsite Facilitator-led

Lesson Overview

Video

Infographic

Activity

Follow-up Discussion

Four Phases

**Knife Skills**

**Flavor Development**

Basic Food Prep Skills (in development)

Basic Cooking Techniques (in development)

## **Culinary Quick Bites**

Short-Format Culinary Trainings for  
School Nutrition Professionals



**CiCN** | CULINARY  
INSTITUTE OF  
CHILD NUTRITION

# Menus of Flavor Trainings

Three 4-hour hands-on culinary skills trainings

## Culinary Basics

Standardized recipes

Mise en place

Weighing and measuring

Knife skills

Hands-on cooking skills development

## East and Southeast Asian Fusion

## Mediterranean

## Latin American



A background image of a commercial kitchen with stainless steel equipment, including a rack of whisks and various pots and pans hanging from a rack.

**Coming Soon!**

**Equipment, Purchasing, and Facility Design  
for School Nutrition Programs**

# USDA Recipe Standardization Guide





# Learning Objectives

- By the end of the presentation, participants will be able to describe what pack sizes are, including their relevance and benefits in school nutrition programs.
- By the conclusion of this session, attendees will be able to demonstrate the ability to apply knowledge of pack sizes to develop recipes for school nutrition programs.

**How do you identify new recipes to use in your program?**

**What approach do you use to develop recipes?**

# Efficient Recipe Planning in School Nutrition Programs

- **Nutritional Adequacy**
- **Cost Management**
- **Student Satisfaction and Participation**
- **Operational Efficiency**
- **Food Safety and Compliance**

# Today's Focus

**Designing recipes based on pack sizes rather than predetermined serving numbers.**

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**Designing recipes based on pack sizes rather than predetermined serving numbers.**

- Operational Efficiency
- Cost Management

# The Benefits of Utilizing Pack Sizes for Recipe Design:

- Reduction in food waste
- Simplification of inventory management
- Enhanced budget control

# Three Step Process

- 1. Assessing the Pack Size and Understanding Its Yield**
- 2. Calculating Ingredient Proportions Based on Pack Size**
- 3. Maintaining Nutritional Integrity and Taste Appeal**



# Example Recipe

## Chicken Fajita

- Chicken strips, unseasoned, unbreaded, frozen – USDA Direct
- Peppers, bell, diced – DoD Fresh
- Onion, yellow, diced – DoD Fresh
- Seasoning, southwest – Made in House
- Tortilla, whole-grain – USDA Direct



# Assessing the Pack Size and Understanding Its Yield

First, assess the pack size and yield of the ingredients you plan to use.

Identify the high-cost item as the baseline to build the recipe.



United States Department of Agriculture



USDA Foods  
in Schools

### 110462 - Chicken Strips, Unseasoned, Frozen

Category: **Meat/Meat Alternate**



#### Product Description

- This item is fully cooked strips of chicken meat with grill marks and a light marinade to retain moisture. The item contains at least 70% white meat content with the remainder coming from dark meat. Each strip is at least 1/2 inch wide and 1 inch long. This item is shipped frozen in 30 pound cases containing six 5-pound or three 10-pound packages.

#### Crediting/Yield

- One case of unseasoned chicken strips provides approximately 320 1.5-ounce portions.
- CN Crediting: Approximately 1.5 ounces of unseasoned chicken strips credit as 1 ounce equivalent meat/meat alternate. Confirm individual item crediting by using the CN Label or the product formulation statement.

#### Nutrition Facts

Serving size: 1.5 ounces (35 g)/1 MMA chicken strips

##### Amount Per Serving

**Calories** 75

**Total Fat** 4g

Saturated Fat 1g

Trans Fat 0g

**Cholesterol** 38mg

**Sodium** 173mg

**Total Carbohydrate** 3g

Dietary Fiber 0g

Sugars 0g

**Protein** 7g

Source: USDA Foods Vendor Labels

# What information do we need?

- Case size
- Pack size
- M/MA ounce equivalent
- Number of servings per case
- Scaling serving size to M/MA equivalent



United States Department of Agriculture



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# What information do we need?

- Case size – 30 lb
- Pack size – Six 5 lb OR Three 10 lb
- M/MA ounce equivalent – 1 M/MA
- Number of servings per case – 320
- Scaling serving size to M/MA equivalent
  - 320 (1.5 oz serving) = 1 M/MA
  - 160 (3 oz serving) = 2 M/MA



United States Department of Agriculture



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# Calculating Ingredient Proportions Based on Pack Size

- Determine the desired portion size – AKA – Ounce Equivalency
- Determine how many servings are in each pack
- Determine total yield needed
- Calculate pack utilization

# Calculating Ingredient Proportions Based on Pack Size

- Determine the desired portion size – AKA – Ounce Equivalency

Do you want a

- 1 oz eq,
- 2 oz eq,
- 1.5 oz eq because you are adding cheese and making up  $\frac{1}{2}$  oz eq?

# Calculating Ingredient Proportions Based on Pack Size

- Determine how many servings are in each pack

For 1 oz eq – 320 per case, 106 per 10 lb bag , 53 per 5 lb bag

For 2 oz eq – 160 per case, 53 per 10 lb bag, 26 per 5 lb bag

For 1.5 oz eq – 213 per case, 71 per 10 lb bag, 35 per 5 lb bag



# Calculating Ingredient Proportions Based on Pack Size

- Determine total yield needed

Example - 500 2 oz eq servings

# Calculating Ingredient Proportions Based on Pack Size

- Calculate pack utilization
  - 160 2oz eq servings per case –  $500 / 160 = 3.125$
  - $160 * 3 = 480$  (remainder of 20)
    - One 5 lb bag has 26 servings

Three cases (480) + One 5 lb bag = 506 servings

# Decision Time

Do you want 506 servings or 480 servings?

506 servings = 3 cases + 1 5 lb bag

480 servings = 3 cases

# Bell Peppers

Pack size – 5 lb

*Food Buying Guide* crediting

|            |  |   |       |      |  |
|------------|--|---|-------|------|--|
| Vegetables | Red/Orange Vegetables<br>PEPPERS, BELL, ORANGE<br>OR RED | <b>Peppers, Bell, fresh</b><br><i>Orange or Red, Medium or Large, Whole</i> | Pound | 9.80 | 1/4 cup cooked, drained vegetable strips |
|------------|--|---|-------|------|--|

1 lb of peppers has 9.80 ¼ cup servings

5 lb of peppers = 49 ¼ cup servings

506 servings needed / 49 servings per bag = 10.32 bags needed

480 servings needed / 49 servings per bag = 9.79 bags needed

# Onion

Pack size – 5 lb

*Food Buying Guide* crediting

|            |                                    |   |       |      |                                 |
|------------|------------------------------------|---|-------|------|---------------------------------|
| Vegetables | Other Vegetables<br>ONIONS, MATURE | <b>Onions, Mature, fresh</b><br><i>All sizes, Whole</i> | Pound | 7.10 | 1/4 cup cooked, whole vegetable |
|------------|------------------------------------|---|-------|------|---------------------------------|

1 lb of onion has 7.10 ¼ cup servings

5 lb of onion = 35.5 ¼ cup servings

506 servings needed / 35.5 servings per bag = 14.25 bags needed

480 servings need / 35.5 servings per bag = 13.5 bags needed

# Tortillas

A case of tortillas has 12 packages of 24 = 288 tortillas per case.

506 servings needed / 288 per case = 1.75 cases

506 – 288 = 220 / 24 (count per package) = 9.1 packages

480 servings needed / 288 per case = 1.66 cases

480 – 288 = 192 / 24 (count per package) = 8 packages

# Summary

## 506 Servings

- Chicken – 3 cases + 1 (5 lb) Bags
- Peppers – 10.32 (5 lb) bags / 11 bags
- Onions – 14.25 (5 lb) bags / 15 bags
- Tortilla – 1 case + 9.1 packages

## 480 Servings

- Chicken – 3 cases
- Peppers – 9.79 (5 lb) bag / 10 bags
- Onions – 13.5 (5 lb) bags / 14 bags
- Tortilla – 1 case + 8 packages



# Maintaining Nutritional Integrity and Taste Appeal

Write the recipe

Small Batch test the recipe

Taste test with students

Train your staff

**Hummus**

Meat/Meat Alternate      Salads and Salad Dressings      E-24

| Ingredients                                   | 50 Servings |                            | 100 Servings |                                | Directions  |
|---|-------------|----------------------------|--------------|--------------------------------|---|
|   | Weight      | Measure                    | Weight       | Measure                        |   |
| Canned garbanzo beans or chickpeas, drained   | 8 lb 8 oz   | 5 of 1 cup (2 No. 10 cans) | 17 lb        | 2 gal 2 1/2 qt (4 No. 10 cans) | 1. Combine all ingredients in a food processor and puree to a smooth consistency.<br><br>2. Spread 5 lb 3/4 oz (approximately 3 of 1 cup) into each shallow pan (12" x 20" x 2 1/2") to a product depth of 2" or less. For 50 servings, use 2 pans. For 100 servings, use 4 pans.<br><br>3. CCP: Chill to 41° F or lower within 4 hours.<br><br>Cover. Refrigerate until service.<br><br>4. Portion with No. 8 scoop (1/2 cup). |
| Frozen lemon juice concentrate, reconstituted |             | 3 3/4 cups                 |              | 1 of 2 1/2 cups                |   |
| Peanut butter                                 | 1 1/2 lb    | 2 1/2 cups                 | 3 lb         | 1 of 1 cup                     |   |
| Tahini  | 1 1/2 lb    | 2 1/2 cups                 | 3 lb         | 1 of 1 cup                     |   |
| Burboner seed butter                          | 1 1/2 lb    | 2 1/2 cups                 | 3 lb         | 1 of 1 cup                     |   |
| Garlic cloves, peeled                         | 5 oz        | 1 cup 1 Tbsp               | 10 oz        | 2 cups 2 Tbsp                  |   |
| Water   |             | 2 3/4 cup                  |              | 1 of 2 3/4 cups                |   |
| Ground black or white pepper                  |             | 1 Tbsp                     |              | 2 Tbsp                         |   |
|   |             |                            |              |                                |   |
|   |             |                            |              |                                |   |

Comments: \*See Marketing Guide.

| Marketing Guide for Selected Items |             |              |
|------------------------------------|-------------|--------------|
| Food as Purchased for              | 50 Servings | 100 Servings |
| Garlic                             | 17 cloves   | 34 cloves    |

SERVING: 1/2 cup (No. 8 scoop) provides 2 oz equivalent meat/meat alternate.

YIELD: 50 Servings: about 13 lb 9 oz      100 Servings: about 1 gallon 2 1/4 quarts 2 pans

VOLUME: 100 Servings: about 27 lb 2 oz      100 Servings: about 3 gallons 2 cups 4 pans

Tested 2006

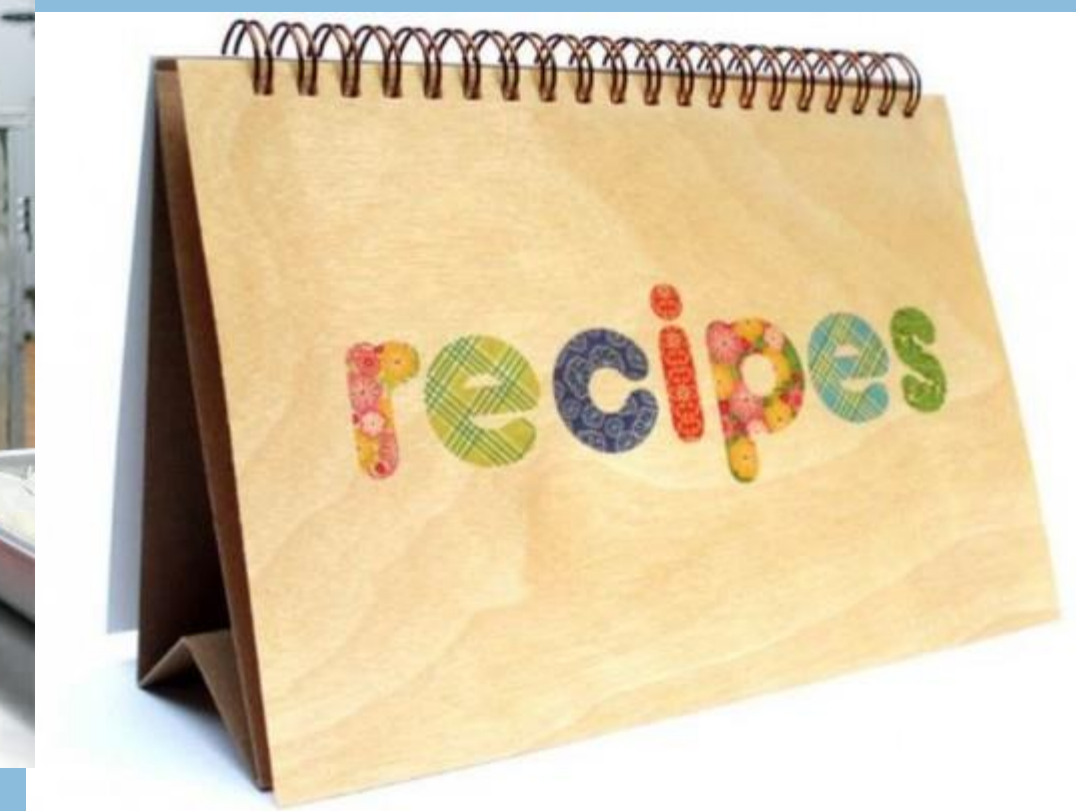




# USDA Recipe Standardization Guide



# How to you test new recipes?



# How do you get student feedback?



# Inspirational Examples

## 990267 - Seasoned Pinto Beans

Recipe HACCP Process: #2 Same Day Service

Source:

Number of Portions: 18

Portion Size: 1/2 cup

| Ingredient # | Ingredient Name                   | Measurements | Instructions  |
|--------------|-----------------------------------|--------------|---|
|              |                                   |              | Preheat oven to 350 F   |
| 903082       | BEANS, PINTO,CND, XB2035          | 1 #10 can    | Spray a 2-inch pan with pan-release spray. Pour the canned beans with liquid into the pan. Stir in the cumin, granulated garlic, onion powder and red chili flakes.<br><br>Bake, uncovered, for 20-25 minutes, or until the liquid has reduced to a sauce consistency.<br><br>CCP: Heat to 165° F or higher for at least 15 seconds |
| 990556       | SPICE: CUMIN, GROUND FSA 30626    | 1 (1 TBSP)   |   |
| 990010       | SPICE: GARLIC, GRANULATED 7G1030  | 1 tsp        |   |
| 002026       | SPICE: ONION POWDER FSA #342268   | 1 TSP        |   |
| 902000       | SPICE: RED CHILI FLAKES USF 26512 | 1 TSP        |   |
|              |                                   |              | Cover and hold hot until service.<br><br>CCP: Hold for hot service at 135° F or higher  |

# Inspirational Examples

## Mojo Style Pork

Recipe HACCP Process:

Source:

Number of Portions: 34

Portion Size: 2.35 ounces

| Ingredient # | Ingredient Name                        | Measurements   | Instructions   |
|--------------|--|----------------|--|
| 002027       | SPICE: OREGANO, DRIED FSA 342307       | 1 tbsp, leaves | Combine dry seasonings.  |
| 002030       | PEPPER, BLACK 7P4747                   | 1 tsp, ground  |  |
| 002047       | SALT, TABLE 7S2020                     | 1 tsp          |  |
| 990556       | SPICE: CUMIN, GROUND FSA 30626         | 1 (1 tsp)      |  |
| 002010       | SPICE: CINNAMON, GROUND 7C3030         | 1 TSP          |  |
| 902000       | SPICE: RED CHILI FLAKES USF 26512      | 1 TSP          |  |
| 990010       | SPICE: GARLIC, GRANULATED 7G1030       | 1 tsp          |  |
| 002026       | SPICE: ONION POWDER FSA #342268        | 1 TSP          |  |
| 990495       | Pork, Pulled, Unsauces                 | 5 LB           | Spray a 2-in full size steamtable pan with vegetable oil. Add the pork and break apart into chunks. Mix in the spice blend and the orange juice concentrate. Bake at 350 degrees until meat reaches 165 degrees (about 10 minutes). Hold product above 135 degrees until ready to be served. |
| 903165       | ORANGE JUICE, CONC 12/32 OZ FSA#262997 | 2 oz           |  |
|              |  |                | 2.35 ounces equals 2 ounce equivalents meat.   |

# Inspirational Examples

## 990265 - Yakisoba Noodles

Recipe HACCP Process:

Source:

Number of Portions: 25

Portion Size: 1 cup

| Ingredient # | Ingredient Name                | Measurements | Instructions   |
|--------------|--------------------------------|--------------|--|
|              |                                |              | Preheat oven to 375 degrees F.   |
| 903129       | Noodles, Chow Mein, FSA#791302 | 5 LB         | Mix all ingredients together. Place in a lined 2-inch steamtable pan. Bake for 15 minutes uncovered. The vegetables will brown slightly and the sauce will adhere to the vegetables and noodles.<br><br>CCP: Heat to 135° F or higher.<br><br>CCP: Hold at 135° F or higher. |
| 990494       | Oil, Sesame Blend FSA 916388   | 3/4 cup      |  |
| 900242       | COLE SLAW MIX FSA#830488       | 2 LB + 8 oz  |  |
| 990002       | SOY SAUCE, LITE FSA 295213     | 1/2 CUP      |  |
| 903162       | ASIAN BASE SAUCE 7S2221        | 2 Cup        |  |
|              |                                |              | Serve 1 cup portions.  |

# Inspirational Examples

## 990202 - Tomato Basil Soup

Recipe HACCP Process: #2 Same Day Service

Source:

Number of Portions: 100

Portion Size: 3/4 cup

| Ingredient # | Ingredient Name                   | Measurements  | Instructions   |
|--------------|-----------------------------------|---------------|--|
| 990172       | OIL,VEG, CANOLA FSA#667641        | 1/2 CUP       | <p>Gather all ingredients,pans and utensils.</p> <p>Quick Oven Method (not preferred,less flavorful):</p> <p>Preheat oven to 350 degrees. Combine all ingredients in a 5 gallon bucket and use an immersion blender to puree tomatoes and mix until all ingredients are well combined. Pour into 6-inch steamtable pans (use half size pans if needed),cover with parchment,then seal tightly with foil. Place in the 350 degree oven and cook for 45-60 minutes until the temperature reaches 165 degrees for 15 seconds.</p> <p>Oven Method:</p> <p>Preheat oven to 350 degrees. For 100 servings,use 2 6-inch steamtable pans. Measure 1/4 cup vegetable oil into each 6-inch steamtable pan. Add 1 tablespoon each granulated garlic and onion powder to the oil in each pan. Add 1 teaspoon black pepper to the oil in each pan. Stir to distribute the spices into the oil. Place pans into the preheated 350 degree oven to heat the spices for only 1 minute. This brings out the flavors of the spices and infuses the oil with flavor. Remove the pans from the oven. Add 1/2 cup tomato paste to each pan and stir into the spices and oil with a rubber spatula or whisk. Add 2 #10 cans diced tomatoes,1/2 gallon hot water, 3/4 cup vegetable base,and 1/3 cup sugar to each pan. Use an immersion blender to mix and puree the tomato soup in each pan. Cover pans with a sheet of parchment paper and secure tightly with foil. Place in the 350 degree oven and cook for 45-60 minutes until the temperature reaches 165 degrees for 15 seconds,</p> <p>Kettle Method:</p> <p>Heat steam jacketed kettle or stock pot (you might need two stock pots for 100 servings) over medium heat. Add the vegetable oil,granulated garlic,onion powder and black pepper. Stir for 30 seconds until the spices are aromatic. Immediately add the tomato paste and stir into the heated oil and spices. Add the diced tomatoes,hot water,vegetable base and sugar. Use an immersion blender to puree the tomato soup. Bring to a simmer over medium heat and cook,covered,for 20 minutes.</p> <p>CCP: Heat to 165° F or higher for at least 15 seconds</p> |
| 990010       | SPICE: GARLIC,GRANULATED 7G1030   | 2 tbsp        |  |
| 002026       | SPICE: ONION POWDER FSA #342268   | 2 TBSP        |  |
| 002030       | PEPPER, BLACK 7P4747              | 2 tsp, ground |  |
| 903140       | TOMATO, PASTE, CND, XT1012        | 1 CUP         |  |
| 900315       | TOMATO, DICED,CND XT1010          | 4 #10 can     |  |
| 900558       | BASE, VEGETABLE, Knorr FSA#505028 | 1 1/2 cup     |  |
| 075010       | WATER,COLD                        | 1 gal         |  |
| 019335       | SUGARS,GRANULATED 7S7075          | 2/3 CUP       |  |

# QUESTIONS?





I N S T I T U T E O F

*child nutrition*

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