



No Time To Train

Short Lessons for School Nutrition Assistants

Adjusting a Recipe with Herbs and Spices

Lesson Overview

Lesson Participants: School Nutrition Assistants/Technicians, School Nutrition Managers, and CACFP Staff

Type of Lesson: Short, face-to-face training session

Time Needed to Conduct the Lesson: 30 minutes

Lesson Description: This lesson reviews the factoring method to adjust a recipe. Guidelines for adjusting a recipe for herbs and spices are demonstrated. Participants can practice adjusting a recipe with an activity. The lesson is designed for managers to teach school nutrition assistants/technicians.

Lesson Objectives:

At the end of this lesson, the participant will be able to

1. Use the factor method to adjust a recipe, and
2. Demonstrate how to adjust herbs and spices in a recipe.

Get Ready to Train

Note: This lesson should be taught along with the No Time to Train lessons *Identifying the Parts of a USDA Quantity Recipe* and *Herbs, Spices, and Seasonings*.

The format for this **No Time to Train** lesson includes: a lesson overview, preparation checklist, lesson at a glance with timeline for conducting the lesson, references, an instructor's script, and handouts. The manager/instructor will use the script to present the lesson to participants. The script gives directions to the manager/instructor—**DO, SAY, ASK, LISTEN, AND ACTIVITY**—for delivering the lesson.

No special audiovisual or electronic equipment is needed to conduct the lesson. The lesson can be presented in the cafeteria, media center, or classroom.



Preparation Checklist

Directions: Use the Preparation Checklist to prepare for the training session. Track your progress by checking off tasks as they are completed.

Done <input checked="" type="checkbox"/>	Lesson Tasks
	<p>Gather Materials</p> <p>Materials Needed:</p>
<input type="checkbox"/>	<ul style="list-style-type: none"> • Instructor’s Script
<input type="checkbox"/>	<ul style="list-style-type: none"> • Handout 1: Equivalent Weights and Volume Measures and Tips
<input type="checkbox"/>	<ul style="list-style-type: none"> • Handout 2: Recipe Conversion Worksheet (Activity and Answers)
<input type="checkbox"/>	<ul style="list-style-type: none"> • Pencils (one for each participant)
<input type="checkbox"/>	<ul style="list-style-type: none"> • Session Evaluation form (one for each participant)
	<p>Prepare for Lesson</p> <p>Before the Training:</p>
<input type="checkbox"/>	<ul style="list-style-type: none"> • Make copies of Handouts 1 and 2 (one for each participant)
<input type="checkbox"/>	<ul style="list-style-type: none"> • Make copies of Session Evaluation form (one for each participant)
	<p>On Training Day:</p>
<input type="checkbox"/>	<ul style="list-style-type: none"> • Place pencils on tables (one for each participant)
<input type="checkbox"/>	<ul style="list-style-type: none"> • Distribute Handouts 1 and 2 to each participant
	<p>On the Instructor’s Table:</p>
<input type="checkbox"/>	<ul style="list-style-type: none"> • Instructor’s Script
<input type="checkbox"/>	<ul style="list-style-type: none"> • Handout 1: Equivalent Weights and Volume Measures and Tips
<input type="checkbox"/>	<ul style="list-style-type: none"> • Handout 2: Recipe Conversion Worksheet (Activity and Answers)
<input type="checkbox"/>	<ul style="list-style-type: none"> • Session Evaluation forms

Lesson at a Glance
(30 minutes)

Time	Topic	Task	Materials
4 minutes	Introduction and Overview	Instructor discusses how to calculate and adjust a recipe with herbs and spices. Distribute Handout 1. Participants will view tables to facilitate computation.	Instructor's Script Handout 1: Equivalent Weights and Volume Measures and Tips
8 minutes	Objective 1: Use the factor method to adjust a recipe.	Distribute Handout 2. Instructor will review directions of the activity with participants. Participants will do the activity on adjusting a USDA recipe.	Handout 2: Recipe Conversion Worksheet (Activity)
8 minutes	Objective 2: Demonstrate how to adjust herbs and spices in a recipe.	Participants will adjust herbs and spices in a recipe.	Handout 2: Recipe Conversion Worksheet (Activity)
4 minutes	Review Activity	Distribute Handout 2 (Answers).	Handout 2: Recipe Conversion Worksheet (Answers)
4 minutes	Wrap up and Review	Volunteers share their answers in a group discussion.	
2 minutes	Session Evaluation	Conduct a short evaluation of the lesson.	Session Evaluation form

References:

National Food Service Management Institute. (2007). *On the road to professional food preparation*. (2nd ed.). University, MS: Author.
<http://nfsmi.org/documentlibraryfiles/PDF/20111118033712.pdf>

National Food Service Management Institute. (2009). *Culinary techniques for healthy school meals: seasonings*. (2nd ed.). University, MS: Author.
<http://www.nfsmi.org/documentlibraryfiles/PDF/20100210102351.pdf>

National Food Service Management Institute. (2009). *Culinary techniques: using seasonings* online course. University, MS: Author. <http://www.nfsmi.org/onlinecourses>
Culinary Techniques for Healthy School Meals: Introduction course is a prerequisite.

U.S. Department of Agriculture, Food and Nutrition Service. (2008). *A menu planner for healthy school meals...to help you plan, prepare, serve, and market appealing meals*.
http://www.fns.usda.gov/tn/resources/menuplanner_chapter7.pdf

U.S. Department of Agriculture, Food and Nutrition Service, and National Food Service Management Institute. (2002). *Measuring success with standardized recipes*. University, MS: Author. <http://nfsmi.org/ResourceOverview.aspx?ID=88>

U.S. Department of Agriculture, Food and Nutrition Service, and National Food Service Management Institute. (2006). *USDA recipes for schools*.
http://www.fns.usda.gov/tn/Resources/usda_recipes.html



Instructor's Script



SAY:

USDA quantity recipes for school nutrition programs are developed and tested to yield 50 and 100 servings. Since we do not always prepare the yield or the number of servings specified in the recipe, it may be necessary to change the yield by increasing or reducing all the ingredients in the recipe. Today you will practice adjusting a recipe and applying some general guidelines for seasonings.



ACTIVITY:

Organize the participants into small working groups for the following activity. Participants will use **Handout 1: Equivalent Weights and Volume Measures and Tips** and **Handout 2: Recipe Conversion Worksheet (Activity)**.



DO:

Allow 8-10 minutes for the group to review both handouts. Briefly discuss each handout and answer any questions.



SAY:

Handout 1: Equivalent Weights and Volume Measures and Tips will be helpful in saving time in adjusting recipes. You may use this handout to complete the activity.



ASK:

How do you adjust a quantity recipe to increase the number of servings? What does the term “multiplying factor” mean when adjusting a recipe?



LISTEN:

Listen to individual responses.



SAY:

A quantity recipe may be adjusted by using the factor method. The factor is the multiplier used to increase or reduce the quantity of ingredients in a recipe. The factor method to adjust a recipe has four steps:

Step 1: Determine the “multiplying factor.”

Step 2: Convert different units to one unit.

Step 3: Multiply each ingredient times the “multiplying factor.”

Step 4: Change the new quantities to the largest unit of common weights and measures.

Step 3: Multiply each ingredient times the “multiplying factor.”

Determine the new weight or volume. See the chili recipe conversion worksheet examples:

Fresh onions, chopped

$$1 \text{ lb } 12 \text{ oz} = 16 \text{ oz/lb} + 12 \text{ oz} = 28 \text{ oz} \times 2 \text{ factor} = 56 \text{ oz (3.5 lb)}$$

OR

$$1 \text{ lb } 12 \text{ oz} = 1.75 \text{ lb} \times 2 \text{ factor} = 3.5 \text{ lb}$$

Step 4: Change the new quantities to the largest unit of common weights and measures.

Fresh onions, chopped

$$1 \text{ lb } 12 \text{ oz} = 16 \text{ oz} + 12 \text{ oz} = 28 \text{ oz} \times 2 \text{ factor} = 56 \text{ oz} = 3.5 \text{ lb}$$



DO:

Allow 8-10 minutes for the group to complete the Recipe Conversion Worksheet, and discuss the answers after the activity.



ASK:

Do you have any questions about adjusting a recipe with herbs and spices?



LISTEN:

Listen to individual responses. Answer questions to the best of your ability. If there are questions you can't answer, tell the participants you will find out the answer and let them know later. If you need assistance in finding answers, please call the National Food Service Management Institute at 800-321-3054.



DO:

Distribute the Session Evaluation form.



SAY:

Thank you for participating in the lesson today. Please take a couple of minutes to complete the Session Evaluation form. Thank you for your input.

Handout 1: Equivalent Weights and Volume Measures and Tips

Directions: Below are charts of time saving measurements.

Measurement Abbreviations	Fractions to Decimal Equivalents	Ounces to Pounds
teaspoon = tsp	1/8 = 0.13	1 lb (1.000 lb) = 16 oz
Tablespoon = Tbsp	1/4 = 0.25	7/8 lb (0.875 lb) = 14oz
ounce = oz	1/3 = 0.33	3/4 lb (0.750 lb) = 12 oz
fluid ounce = fl oz	3/8 = 0.38	2/3 lb (0.667 lb) = 10 2/3 oz
pound = lb or #	1/2 = 0.50	5/8 lb (0.625 lb) = 10 oz
cup = c or cup	5/8 = 0.62	1/2 lb (0.500 lb) = 8 oz
pint = pt	2/3 = 0.67	3/8 lb (0.375 lb) = 6 oz
quart = qt	3/4 = 0.75	1/3 lb (0.333 lb) = 5 1/3 oz
gallon = gal	7/8 = 0.88	1/4 lb (0.250 lb) = 4 oz
weight = wt		1/8 lb (0.125 lb) = 2 oz
number = No.		1/16 lb (0.063 lb) = 1 oz
package = pkg		
degree Fahrenheit = °F		
degree Celsius = °C		
multiply = x		
divide = ÷		

Cup	Fluid oz	Teaspoon	Tablespoon	Pint	Quart	Gallon
1/16 c	0.5 fl oz	3 tsp	1 Tbsp	--	--	--
1/8 c	1 fl oz	6 tsp	2 Tbsp	--	--	--
1/4 c	2 fl oz	12 tsp	4 Tbsp	--	--	--
1/3 c	3 fl oz	16 tsp	5 Tbsp	--	--	--
1/2 c	4 fl oz	24 tsp	8 Tbsp	--	--	--
2/3 c	5 fl oz	32 tsp	11 Tbsp	--	--	--
3/4 c	6 fl oz	36 tsp	12 Tbsp	--	--	--
1 c	8 fl oz	48 tsp	16 Tbsp	.5 pt	1/4 qt	--
2 c	16 fl oz	--	--	1.0 pt	1/2 qt	--
3 c	24 fl oz	--	--	1.5 pt	3/4 qt	--
4 c	32 fl oz	--	--	2 pt	1 qt	1/4 gal
8 c	64 fl oz	--	--	4 pt	2 qt	1/2 gal
12 c	96 fl oz	--	--	6 pt	3 qt	3/4 gal
16 c	128 fl oz	--	--	8 pt	4 qt	1 gal



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Adjusting a Recipe with Herbs and Spices

Handout 2: Recipe Conversion Worksheet (Activity)

Directions: Complete the recipe conversion worksheet. Calculate and adjust the USDA recipe Chili con Carne with Beans (D-20) using the factor method of recipe adjustment. Adjust the recipe for a yield of 100 servings to be **increased to 200 servings**. In general, double the herbs and spices in a recipe up to 100 servings. Increase the herbs and spices by 25% (0.25) for each additional 100 servings. Heat builds in recipes quickly, especially when adding hot seasoning such as red pepper (cayenne), mustard, cloves, and peppercorns. Use the following steps to change the yield of the recipe. Minimal rounding is acceptable as long as the value is rounded up.

Step 1: Determine the “multiplying factor.”

$$\frac{\text{Needed Yield } 200}{\text{Current Recipe Yield } 100} = 2 \text{ (multiplying factor)}$$

NOTE: Increase the herbs and spices by 25 % (0.25) for each additional 100 servings

Example:

Ground black or white pepper, 1 Tbsp 1 tsp = 4 tsp x **2.25 factor** = 9 tsp = 3Tbsp

Step 2: Convert different units to one unit.

Convert different units of the ingredients’ weight and measure amounts to one unit of measure. It is recommended to adjust a recipe by weight rather than by volume when possible. Change weight to either all ounces or all pounds. Change fractions to decimals for weights and measures to facilitate computation by using the Handout 1 tables. See worksheet.

Fresh onions, chopped 1 lb 12 oz = 16 oz/lb + 12 oz = 28 oz

OR

1 lb 12 oz = 1.75 lb (28 oz)

Step 3: Multiply each ingredient times the “multiplying factor.”

Determine the new weight or volume; for example.

Fresh onions, chopped 1 lb 12 oz = 16 oz + 12 oz = 28 oz x 2 factor = 56 oz

OR

1 lb 12 oz = 1.75 lb x 2 factor = 3.5 lb

Step 4: Change the new quantities to the largest unit or nearest measurable amount.

See the example,

Fresh onions, chopped 1 lb 12 oz = 16 oz + 12 oz = 28 oz x 2 factor = 56 oz = 3.5 lb



Chili con Carne with Beans

Meat/Meat Alternate-Vegetable

Main Dishes

D-20

Ingredients	50 Servings		100 Servings		Directions
	Weight	Measure	Weight	Measure	
Raw ground beef (no more than 20% fat)	7 lb		14 lb		1. Brown ground beef. Drain. Continue immediately.
*Fresh onions, chopped OR Dehydrated onions	14 oz OR 2 ½ oz	2 ½ cups OR 1 ¾ cups	1 lb 12 oz OR 5 oz	1 qt ¾ cup OR 2 ½ cups	2. Add onions, granulated garlic, green pepper (optional), pepper, chili powder, paprika, onion powder, and ground cumin. Cook for 5 minutes.
Granulated garlic		1 Tbsp 1 ½ tsp		3 Tbsp	
*Fresh green pepper, chopped (optional)	8 oz	1 ½ cups 2 Tbsp	1 lb	3 ¾ cups	
Ground black or white pepper		2 tsp		1 Tbsp 1 tsp	
Chili powder		3 Tbsp		¾ cup 2 Tbsp	
Paprika		1 Tbsp		2 Tbsp	
Onion powder		1 Tbsp		2 Tbsp	
Ground cumin	1 oz	¼ cup	2 oz	½ cup	
Canned diced tomatoes, with juice	3 lb 3 oz	1 qt 2 ¾ cups (½ No. 10 can)	6 lb 6 oz	3 qt ½ cup (1 No. 10 can)	3. Stir in tomatoes, water, and tomato paste; mix well. Bring to boil. Reduce heat. Cover. Simmer slowly, stirring occasionally until thickened, about 40 minutes.
Water		2 qt 1 cup		1 gal 2 cups	
Canned tomato paste	1 lb 12 oz	3 cups 2 Tbsp (¼ No. 10 can)	3 lb 8 oz	1 qt 2 ¼ cups (½ No. 10 can)	
Canned pinto or kidney beans, drained OR *Dry pinto or kidney beans, cooked (see Special Tip)	3 lb 6 oz OR 2 lb 4 oz	1 qt 3 ½ cups (½ No. 10 can) OR 1 qt 2 cups	6 lb 12 oz OR 4 lb 8 oz	3 qt 3 cups (1 No. 10 can) OR 3 qt	4. Stir in beans. Cover and simmer. Stir occasionally. CCP: Heat to 155° F or higher for 15 seconds. OR If using previously cooked and chilled beans: CCP: Heat to 165° F or higher for at least 15 seconds.
					5. Pour into serving pans.
					6. CCP: Hold for hot service at 135° F or higher. Portion with 4 oz ladle (½ cup).
Reduced fat Cheddar cheese, shredded (optional)	1 lb 8 oz	1 qt 2 cups	3 lb	3 qt	7. Garnish with cheese (optional).

Source: U.S. Department of Agriculture, Food and Nutrition Service, and National Food Service Management Institute. (2006). *USDA Recipes for Schools*. http://www.nfsmi.org/USDA_recipes/school_recipes/D-20.pdf



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Handout 2: Recipe Conversion Worksheet (Continued)

Ingredient	Quantity 100 (from Old Recipe)	Old Quantity	Times	Multiplying Factor	Equals	New Quantity	Quantity 200 (for New Recipe)
Raw ground beef (no more than 20% fat)	14 lb	-	x	2	=	-	28 lb
Fresh onion, chopped	1 lb 12 oz	28 oz	x	2	=	56 oz	3.5 lb
Granulated garlic	3 Tbsp	-	x	2	=	-	6 Tbsp
Fresh green pepper, chopped	1 lb	-	x	2	=	-	2 lb
NOTE: Increase the herbs and spices by 25 % (0.25) for each additional 100 servings							
Ground black or white pepper	1 Tbsp 1 tsp	4 tsp	x	2.25	=	9 tsp	3Tbsp
Chili powder	1/4 cup 2 tsp	14 tsp	x	2.25	=		
Paprika	2 Tbsp	6 tsp	x	2.25	=		
Onion powder	2 Tbsp	6 tsp	x	2.25	=		
Ground cumin	1 /2 cup	8 Tbsp	x	2.25	=		
Canned diced tomatoes, with juice	6 lb 6 oz	102 oz	x	2	=		
Water	1 gal 2 cups	18 cups	x	2	=		
Canned tomato paste	3 lb 8 oz	56 oz	x	2	=		
Canned pinto or kidney beans, drained	6 lb 12 oz (1 No. 10 can)	108 oz	x	2	=		
Reduced fat Cheddar Cheese, Shredded (optional)	3 lb	-	x	2	=		

Adapted from: U.S. Department of Agriculture, Food and Nutrition Service, and National Food Service Management Institute. (2006).
USDA Recipes for Schools. (pp.22-26) http://teamnutrition.usda.gov/Resources/rec_adjust.pdf



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Handout 2: Recipe Conversion Worksheet (Answers)

Ingredient	Quantity 100 (from Old Recipe)	Old Quantity	Times	Multiplying Factor	Equals	New Quantity	Quantity 200 (for New Recipe)
Raw ground beef (no more than 20% fat)	14 lb	-	x	2	=	-	28 lb
Fresh onion, chopped	1 lb 12 oz	28 oz	x	2	=	56 oz	3.5 lb
Granulated garlic	3 Tbsp	-	x	2	=	-	6 Tbsp
Fresh green pepper, chopped	1 lb	-	x	2	=	-	2 lb
NOTE: Increase the herbs and spices by 25 % for each additional 100 servings							
Ground black or white pepper	1 Tbsp 1 tsp	4 tsp	x	2.25	=	9 tsp	3Tbsp
Chili powder	1/4 cup 2 tsp	14 tsp	x	2.25	=	31.5 tsp	11 Tbsp + 2 tsp or ½ cup + 3 Tbsp + 2 tsp
Paprika	2 Tbsp	6 tsp	x	2.25	=	7.5 tsp	4 Tbsp + 2 tsp
Onion powder	2 Tbsp	6 tsp	x	2.25	=	7.5 tsp	4 Tbsp + 2 tsp
Ground cumin	1 /2 cup	8 Tbsp	x	2.25	=	18 Tbsp	2 ¼ cups
Canned diced tomatoes, with juice	6 lb 6 oz	102 oz	x	2	=	204 oz	12 lb 12 oz
Water	1 gal 2 cups	18 cups	x	2	=	36 cups	2 gal + 1 qt
Canned tomato paste	3 lb 8 oz	56 oz	x	2	=	112 oz	7 lb
Canned pinto or kidney beans, drained	6 lb 12 oz (1 No. 10 can)	108 oz	x	2	=	216 oz	13 lb 8 oz (2 No. 10 cans)
Reduced fat Cheddar Cheese, Shredded (optional)	3 lb	-	x	2	=	-	6 lb



National Food Service Management Institute
The University of Mississippi

Session Evaluation

Instructions:

Completely fill in the circle of your answer. Use a #2 pencil.

Please select only one response for each statement. Do not fold or crease this sheet.

Title of Meeting: _____	Trainer's Code: _____
Session Topic: _____	Date: _____
Time Slot: _____	Location: _____
Length of Event (hrs/min): _____	

Attendee Status:

- | | | |
|--|---|--|
| <input type="radio"/> District director | <input type="radio"/> Major city director | <input type="radio"/> Private consultant/trainer |
| <input type="radio"/> State agency staff | <input type="radio"/> Site-level manager | <input type="radio"/> Foodservice assistant |
| <input type="radio"/> Educator | <input type="radio"/> Other (please list) _____ | |

Reaction to this Session		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Please read the following statements related to the session. Rate your level of agreement by using the scale 5 (Strongly Agree) to 1 (Strongly Disagree).						
1.	The session objectives were clearly presented.	5	4	3	2	1
2.	The session objectives were achieved.	5	4	3	2	1
3.	I can apply what I learned in this session to my job.	5	4	3	2	1
4.	Attending the session increased my skill on the topic.	5	4	3	2	1
5.	Attending the session increased my knowledge on the topic.	5	4	3	2	1
6.	I would recommend this session to others.	5	4	3	2	1
7.	Overall, the session met or exceeded my expectations.	5	4	3	2	1

Comments about this Session
<p>The information I found MOST useful was:</p> <hr/> <hr/> <hr/>
<p>Please share any additional comments:</p> <hr/> <hr/> <hr/>

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