

# Math Lab Instructor Notes

## “Culinary Arts”

### Prealgebra - Fractions

- Materials: None
- Time Required: 30 minutes if the activity is completed in class
- Brief Description: Using basic equivalency tables for standard measurements used in cooking students will make the necessary conversions.
- General Notes:
- Follow Up/ Discussion Questions:
  - Students can be asked to use a favorite family recipe and increase it to feed a large group of people.
  - Students can be asked to plan a dinner party, banquet, or special event. They will plan the menu to determine the amount of ingredients needed, and the cost.

# Cooking Lab

Name(s): \_\_\_\_\_

Often times a chef is required to convert the amount needed in a recipe to units corresponding to the measuring tools available or the units in the packaging. Similarly, recipes that feed only 6 may need to be increase to accommodate larger numbers of people. In both cases, the use of fractions is often necessary.

## **Standard Volume Equivalents:**

1 tablespoon = 3 teaspoons =  $\frac{1}{2}$  fluid oz

1 cup = 16 Tablespoons = 8 fluid oz.

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

16 oz. = 1 lb

For liquids 1 pint = 1 pound

**Metric Conversions:**

1 gram = 1,000 milligrams

1 kilogram = 1,000 grams

1 liter = 1,000 milliliters

**English to Metric Conversions:**

1 ounce = grams

1 liter = fluid ounces

1 kilogram = pounds

Example: Convert 30 teaspoons to cups.

$$\frac{30 \cancel{\text{tsp}}}{1} \times \frac{1 \cancel{\text{tbsp}}}{3 \cancel{\text{tsp}}} \times \frac{1 \text{C}}{16 \cancel{\text{tbsp}}} = \frac{30 \text{C}}{48} = \frac{5}{8} \text{C}$$

Note: When setting up the conversions, begin by putting the initial amount over 1 and then set up the appropriate conversion factors so that the units in the numerator cancel with those in the denominator until the required unit is the only one remaining.

**Practice Exercises: Show your work for each conversion.**

1) pt = \_\_\_\_\_ tbsp

2) 200g = \_\_\_\_\_ lbs

3) oz = \_\_\_\_\_ g

4) 75 mL = \_\_\_\_\_ fl oz

**The following exercises were provided to the Math Department by Mesa College's Culinary Arts program as examples of real problems students face in the program. In each case, do not use a calculator or decimals and show your work. And enjoy.**

\_\_\_\_\_ 5) If a recipe calls for C of milk and you have been asked to halve the recipe,

\_\_\_\_\_ 6) You need 7 pounds 12 ounces of beef however you can only order it in whole kilogram units. How many kilograms of beef should you order?

\_\_\_\_\_ 7) If you are preparing 3 oz servings of fruit cocktail, how many full servings can you get from 5 kilograms of fruit cocktail?

8) You have 4 pounds 8 ounces of gouda cheese. The recipe calls for kilograms of gouda cheese.

\_\_\_\_\_ Do you have enough cheese?

\_\_\_\_\_ How many kilograms do you have left over or how much more do you need?

9) You have a case of chicken broth which contains six 2 liter containers and you need 14 quarts of stock for the soup.

\_\_\_\_\_ Do you have enough?

\_\_\_\_\_ How many quarts do you have left over or how many more quarts do you need?

\_\_\_\_\_ 10) You are asked to make 58 strawberry tarts for an upcoming spring event. Each tart requires 50g of flour. How many lbs of flour will you need?

\_\_\_\_\_ 11) An original recipe calls for C of cream. If you wish to increase the amount by times, how many Liters of cream do you need?