



# Measurement: Dry, Liquid and Scales

# 3

\*18 U.S.C. 707

**Amount of Time for Lesson: 45 Minutes**

**Standards of Learning:**

## **Grade 2:**

### **Mathematics**

- 2.4 The student will identify the part of a set and/or region that represents one-half, one-third, one-fourth, one-eighth, and one-tenth and write the corresponding fractions.
- 2.15 The student will estimate and then determine weight/mass of familiar objects in pounds and/or kilograms, using a scale.
- 2.17 The student will use actual measuring devices to compare metric and U. S. Customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the concepts of more, less, and equivalent.

### **Science**

- 2.3 The student will investigate and understand basic properties of solids, liquids, and gases.

### **English**

- 2.5 The student will use meaning clues when reading; use pictures and diagrams.

## **Grade 3:**

### **Mathematics**

- 3.5 The student will name and write the fractions represented by drawings or concrete materials and represent a given fraction, using concrete materials and symbols.
- 3.6 The student will compare the numerical value of two fractions having like and unlike denominators, using concrete materials.
- 3.11 The student will add and subtract with proper fractions having like denominators of 10 or less, using concrete materials.
- 3.12 The student will add and subtract with decimals expressed as tenths, using concrete materials and paper and pencil.
- 3.14 The student will estimate and then use actual measuring devices with metric and U.S. Customary units to measure liquid volume - cups, pints, quarts, gallons, and liters.



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## ■ Goal of Lesson:

Students will use measuring and weighing devices to learn and compare measuring devices (spoons, cups, and scales) using liquid and dry ingredients.

## ■ Learning Objectives:

1. Identify measuring sizes-one-half, one-third, one-fourth, and one-eighth-for dry and liquid ingredients.
2. Compare various measurements using the concepts of more, less, and equivalent.
3. Measure and weigh various amounts of dry and liquid ingredients using measuring spoons, cups, and scales.

## ■ Supplies:

- Food Guide Pyramid poster
- Paper, plastic, or real food items
- Dry and liquid measuring cups and spoons
- Scales
- Spoons and butter knives
- Wax paper
- Re-sealable plastic bags
- Hot Chocolate ingredients: dry milk, powdered sugar, cocoa, and non dairy creamer.
- Pitchers of water
- Before lesson, set up the station with the necessary ingredients and measuring equipment. The number of stations depends on the number of students.

## ■ Introduction of Lesson:

Last time we talked about the Food Guide Pyramid. Let's review the parts of the pyramid and the number of servings children should have each day. We also talked about what was a serving size for each food group in the pyramid. What is the serving size for a glass of milk?



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What is a serving size for cooked vegetables or chopped fruit?

- 1 cup of milk
- 3/4 cup of juice
- 1/2 cup vegetable and fruit
- 1/2 cup dried beans
- 3 oz. meat

## Rules for Conduct:

1. To participate is a privilege with privileges come responsibilities. If you are unable to cooperate you cannot participate.
2. Please raise your hand if you have questions or comments. Please hold questions and comments until after I have finished speaking.
3. When I'm speaking I expect the respect of others to be quiet and listen and I will insist that your classmates show you the same respect when you speak.
4. No negative comments about food are allowed.
5. We will be open-minded and be willing to try new foods since variety is important for good health. If we try a new food we don't like we are allowed to say, "I haven't learned to like it yet."
6. If I need to speak to you once, you have had a warning. If there is a second time you will need to relocate.

## Teacher's Guide

### Introduction Activity:

Who likes to drink hot chocolate? Today we are going to measure the ingredients needed to make hot chocolate. We will use measuring spoons, cups, and scales to measure the dry ingredients. We will also compare various measurements to help you understand serving sizes.

## Student Activities

Food Guide Pyramid  
Poster

Measuring cups, spoons  
and scales



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## Teacher's Guide

## Student Activities

### 1. Identify measuring sizes— one-half, one-third, one-fourth, and one-eighth— for dry and liquid ingredients.

Discuss the different measuring devices and give examples

Demonstrate the proper ways to measure liquid and dry ingredients

Dry ingredients: Spoon ingredients into the correct size dry measuring cup or spoon. Fill to overflowing and then level off with edge of a knife.

### 2. Compare various measurements using the concepts of more, less, and equivalent.

Use various sizes of measuring spoons and cups to ask more, less, and equivalent questions.

For example:

3 teaspoons = 1 Tablespoon      4 Tablespoons = 1/4 cup

### 3. Measure and weigh various amounts dry and liquid ingredients using measuring spoons, cups, and scales.

After student dry measuring activity, as a group or individually weigh the plastic bag of ingredients on a scale to see if it is less or more than one pound or other amounts.

How much does it weigh? \_\_\_\_\_

Next, as a group or individually student will complete the liquid ingredients activity.

Equivalents and Fractions:

- Measure the number of teaspoons of water to equal one tablespoon.  
How many? \_\_\_\_\_
- Measure the number of tablespoons of water to equal 1/4 cup. How many? \_\_\_\_\_
- Measure the number of 1/3 cups of water to equal 1 cup.  
How many? \_\_\_\_\_

Review the answers.

Explain Handout to ensure understanding.

Measure sugar in a teaspoon and 1/4 cup using the flat edge of a butter knife or spatula.

Measure 1/2 cup water in a 1 cup liquid measuring cup.

Slowly pour liquid into a liquid measuring cup. Check at eye level to make an accurate measurement.

Select students to measure examples that you create.

Pair up students to measure four ingredients. Each pair of two students need a pencil, a handout, and re-closeable plastic bags.

Measure:

1/4 cup dry milk

1 tablespoon sugar

2 1/3 teaspoon cocoa

3/4 teaspoon non-dairy creamer

Students weigh the bag of dry ingredients.

Students measure liquid ingredients.



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## Support Materials for Teachers:

### Children's Books:

How tall, how short, how far away David A. Adler

Lulu's Lemonade Barbara deRubertis

### Handouts:

Measuring Stations (VCE 348-061)

Instant Hot Chocolate (VCE 348-061)

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