
FOODS AND NUTRITION

TOPIC #13: Food Measurements

TIME PERIOD: 1½ -2 days

CORE STANDARD #4: *Careers:* The students will explore careers related to family and consumer sciences and health, identifying skills which are applicable for both the home and the school/workplace, and the impact of career choices on family lifestyles.

OBJECTIVE: Students will demonstrate use of standard measurement abbreviations, equivalents, and techniques during a food preparation experience.

INDEPENDENT LIVING SKILLS (COMPETENCIES):

- | | |
|--------------|---|
| 20.0001-0405 | Recognize and use standard measurement abbreviations. |
| 20.0001-0406 | Recognize and use standard measurement equivalents. |
| 20.0001-0407 | Apply standard measurement techniques. |

LIFE SKILLS:

- * Lifelong Learning
- * Complex Thinking
- * Effective Communication
- * Collaboration
- * Responsible Citizenship
- * Employability

RELATED CAREERS:

Cook and/or Chef
 Food Scientist
 Baker or Pastry Chef
 Dietitian
 Food Inspector
 Food Technologist

OCCUPATIONAL CLUSTER:

Technical/Crafts; Family and Consumer Sciences
 Technical/Agriculture and Natural Resources; FACS
 Technical/Crafts; Family and Consumer Sciences
 Scientific/Medical; Family and Consumer Sciences
 Scientific/Medical; Family and Consumer Sciences
 Technical/Agriculture and Natural Resources; FACS

**LIST OF STUDENT ACTIVITIES:****SUPPLIES REQUIRED:**

- | | | |
|------|--|---|
| 1. | Measurements Bulletin Board | Pieces of measuring equipment (13.12-13.15) |
| 2. | Measuring Race (Motivator) | Flour, water, salt Measuring equipment: (1) Dry measuring cup (1) Liquid measuring cup (2) Tablespoons (1) Teaspoon |
| ▶ 3. | Measuring Techniques | Copies of student activity guide (13.19-13.21) Supplies and equipment for "Fruit Freeze" demonstration (13.18) |
| ▶ 4. | Measurement Abbreviations and Equivalent Activity | Copies of student activity guide (13.25-13.26) Measuring equipment: (1) Teaspoon and tablespoon (1) Liquid measuring cup (1) Pint jar (1) Quart jar (1) Gallon jar (1) Quarter pound stick of margarine |
| 5. | <u>Mad Measurer</u> and <u>Absent Minded Abbreviator</u> Games | Several sets of each game (13.29-13.48) |
| 6. | Measuring Lab - Easy Oatmeal Bars or - Oatmeal Munchies | Copies of lab sheets for students (13.49-13.52) Overhead transparency of lab sheet Ingredients for recipe chosen |
| 7. | Identification of Related Careers | Career information (13.53-13.54) Career posters (13.55-13.60) |



PROCEDURE

CONCEPT: Correct measurements are a vital part of food preparation at home, school, or in the workplace.

1. FOOD MEASUREMENTS BULLETIN BOARD

Prior to the beginning of this topic, prepare a bulletin board on food measurements similar to the diagram on page 13.12 using the patterns provided on pages 13.13-13.15 to illustrate the standard measurements.

2. MEASURING RACE (MOTIVATOR)

Have a race between two students to see who can measure equivalent volumes the fastest using different methods for measuring. Both students should begin measuring at the same time. This activity illustrates how using the largest possible measurement saves a lot of time in food preparation.

Student #1 should have:

- a dry measuring cup
- a liquid measuring cup
- a tablespoon
- a mixing bowl

Student #2 should have:

- a tablespoon
- a teaspoon
- a mixing bowl

Both students should have:

- flour
- salt
- water

Student #1 should measure:

- 1 cup flour
- 1/4 cup water
- 1 Tbsp. salt

Student #2 should measure:

- 1/4 cup flour (4 times)
- 1 Tbsp. water (4 times)
- 1 teaspoon salt (3 times)

NOTE: If the teacher doesn't want to waste the ingredients used in this activity, three (3) small containers could be used to keep the ingredients separate for reuse.



PROCEDURE

3. **MEASURING TECHNIQUES**

Demonstrate various measuring techniques, using the student activity guide, MEASURING TECHNIQUES (pages 13.19-13.21), as a directory for information to cover. It is recommended that the teacher finish the demonstration by making the FRUIT FREEZE recipe provided on page 13.18, with particular emphasis placed on the measuring techniques incorporated.

4. **MEASUREMENT ABBREVIATIONS AND EQUIVALENTS ACTIVITIES**

Part I - Abbreviations:

Give each student a copy of the student activity guide, MEASUREMENT ABBREVIATIONS AND EQUIVALENTS (pages 13.25-13.26), and let the students guess at the measurement abbreviations on page 13.25. After the students have completed this page, give the correct answers to the students, allowing them to correct their papers for reference later.

Part II - Equivalents:

Set up a measurement table with various kinds of measuring equipment, water, and margarine. Review the directions given at the top of page 13.26 with the students and let the students complete the MEASUREMENT EQUIVALENTS student activity guide.

A resource for measurement, abbreviation, and equivalent tables is recipe books. The students should know that this source is readily available for them whenever needed.

This student activity guide could be included in the "Independent Ideas" Handbook.

5. **THE MAD MEASURER AND THE ABSENT-MINDED ABBREVIATOR**

After the students have reviewed the measurement equivalents and abbreviations found on the measurement information sheet, the students can break into small groups and play "The Mad Measurer" and "The Absent-Minded Abbreviator" (pages 13.29-13.48).

NOTE: It is suggested the teacher have several sets of these games run on card stock and laminated before cutting them apart. To further simplify things, it is also suggested that the teacher use one group of colors for the sets of equivalents and another group of colors for the sets of abbreviations to help keep the sets separated.



INSTRUCTIONS FOR "THE MAD MEASURER" AND "THE ABSENT-MINDED ABBREVIATOR"

Both of these games are played the same as the "Old Maid" card game. The wild card in the measuring game is called the "Mad Measurer," and the wild card in the abbreviations game is called the "Absent-Minded Abbreviator."

Just a quick review about "Old Maid" rules:

- a. The cards are shuffled and all of the cards are passed out to the players.
- b. Players should check their cards to see if they have any "matches," and if they do, they should be put down on the table next to the player.
- c. As each person takes his/her turn, he/she draws one card from the player on his/her left. After drawing, if he/she has a "match," it should be placed on the table. The player continues to draw as long as he/she has "matches."
- d. When the player no longer has any "matches," the player on his/her right takes his/her turn, etc., as play continues around the table.
- e. The object is to get all the cards matched up and placed down on the table as soon as possible. Play should continue until all the cards have been matched.
- f. The player left with the wild card is the "Mad Measurer" or the "Absent-Minded Abbreviator" and can be declared the winner. The teacher may want to give some reward to the winners.

6. **MEASURING LAB**

Let the students make one of the recipes supplied (13.49-13.52) and practice using the measuring techniques.

Since this will be the first food lab experience in the T-L-C CORE program, it might be good to take some time to go over the following items as necessary:

- a. How to complete the lab sheet. (The teacher may want to make an overhead transparency of the lab sheet to use for reference as the directions are given.)
- b. Explain that lab sheets are an important planning tool that prevents wasted time and wasted food.
- c. This procedure will be used every time they have a food preparation lab.



- d. Labs are designed as learning experiences, not just snack time!
- e. The teacher must see the finished product for evaluation before it is eaten.
- f. How to complete the brief evaluation section on the lab sheet after the product is made.
- g. Remind the students of the importance of measuring carefully so they have a quality product to enjoy.
- h. Identify the ingredients in the recipe chosen that are high in nutritional value and discuss them with the students.

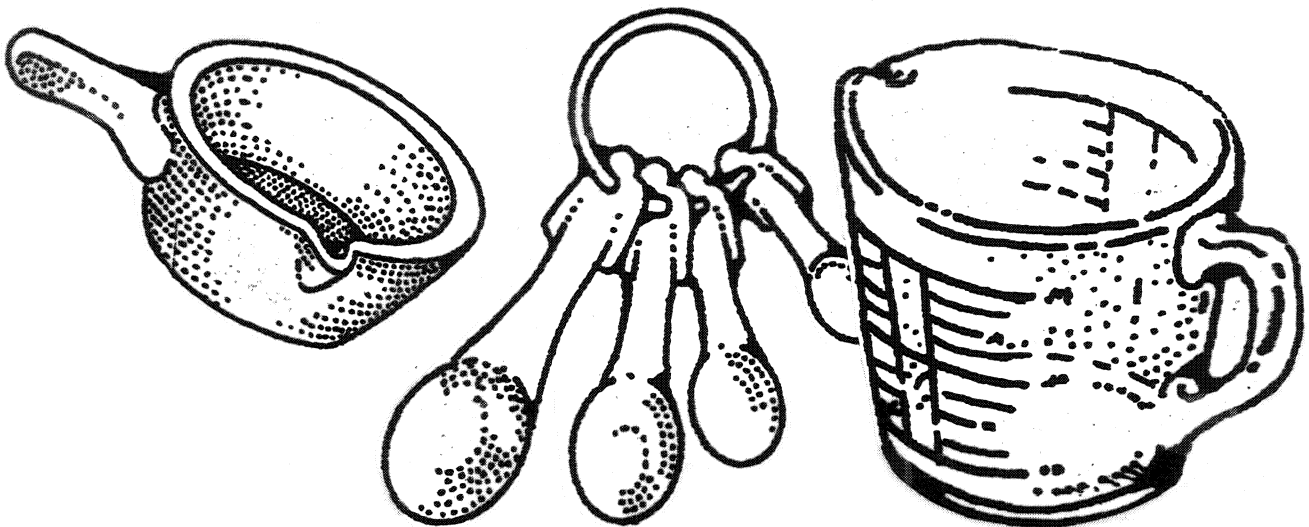
These two recipes have been selected because of the measuring experiences involved and the short time required to complete the lab.

7. IDENTIFICATION OF RELATED CAREERS

Identify the careers related to food measurements by using the career information (pages 13.53-13.54) and the career posters (pages 13.55-13.60).

SUMMARY:

A basic knowledge of measuring terms, equipment, and equivalents is necessary before one can successfully prepare food to eat at home, school, or in the workplace.





CORE TEST QUESTION BANK

20.0001-0405 *Recognize and use standard measurement abbreviations.*

1. Match the abbreviations listed on the left with the measurement terms on the right by putting the letter of the abbreviation in the space before the measurement term.

| | | | |
|----|-------------|-------|------------|
| A. | c. | _ C _ | quart |
| B. | pt. | _ G _ | ounce |
| C. | qt. | _ H _ | pound |
| D. | gal. | _ B _ | pint |
| E. | tsp. or t. | _ F _ | tablespoon |
| F. | Tbsp. or T. | _ A _ | cup |
| G. | oz. | _ E _ | teaspoon |
| H. | lb. | _ D _ | gallon |

2. Match the abbreviations listed on the left with the measurement terms on the right by putting the letter of the abbreviation in the space before the measurement term.

| | | | |
|----|------|-------|--------------------|
| I. | tr. | _ L _ | hour |
| J. | doz. | _ I _ | trace |
| K. | °F. | _ K _ | degrees Fahrenheit |
| L. | hr. | _ O _ | degrees Celsius |
| M. | min. | _ N _ | seconds |
| N. | sec. | _ J _ | dozen |
| O. | °C | _ M _ | minutes |

20.0001-0406 *Recognize and use standard measurement equivalents.*

1. Match the amounts listed on the left with the amount that is equal on the right by putting the letter in the space provided.

| | | | |
|----|-----------------------------|-------|--------------|
| A. | 4 quarts | _ I _ | ½ pound |
| B. | 4 cups or 2 pints | _ A _ | 1 gallon |
| C. | 2 cups | _ E _ | ½ cup |
| D. | ½ pint or 16 tablespoons | _ H _ | 1 pound |
| E. | 8 tablespoons | _ B _ | 1 quart |
| F. | 4 tablespoons | _ D _ | 1 cup |
| G. | 3 teaspoons | _ G _ | 1 tablespoon |
| H. | 16 ounces | _ C _ | 1 pint |
| I. | 8 ounces | _ F _ | ¼ cup |

**CORE TEST QUESTION BANK**

2. If there are 2 pints in a quart, and there are 4 quarts in a gallon, how many pints are there in a gallon?
 - a. 6
 - b.* 8
 - c. 12
 - d. 16

3. If there are 3 teaspoons in a tablespoon, and there are 4 tablespoons in a $\frac{1}{4}$ cup, how many teaspoons are there in a $\frac{1}{4}$ cup?
 - a. 6
 - b. 8
 - c.* 12
 - d. 16

4. If there are 4 cups in a quart, and there are 4 quarts in a gallon, how many cups are there in a gallon?
 - a. 6
 - b. 8
 - c. 12
 - d.* 16

5. If there are 16 ounces in a pound, how many ounces would be in 3 pounds?
 - a. 24
 - b. 36
 - c.* 48
 - d. 50

6. One stick of butter or margarine is equal to:
 - a. $\frac{1}{4}$ cup
 - b. $\frac{1}{3}$ cup
 - c.* $\frac{1}{2}$ cup
 - d. 1 cup

7. If the recipe calls for 2 teaspoons of vanilla and you are tripling (3 times) the recipe, how much vanilla will you measure?
 - a. 1 tablespoon
 - b.* 2 tablespoons
 - c. 3 tablespoons
 - d. 6 tablespoons

**CORE TEST QUESTION BANK****20.0001-0407 *Apply standard measurement techniques.***

1. For the purpose of measuring, food ingredients are divided into two groups. They are:
 - a. Hard and soft
 - b.* Liquid and dry
 - c. Cooked and uncooked

2. "Graduated cups" means:
 - a.* That each cup in the set is slightly larger than the last one
 - b. That each cup in the set is exactly the same size
 - c. That each cup in the set is a different color than the last one

3. In recipes that call for the flour to be sifted, when should the flour be sifted?
 - a.* Before you measure it
 - b. After you measure it
 - c. After you mix it with the other dry ingredients
 - d. Any of the above items will be okay

4. When measuring brown sugar, it should be:
 - a. Loosely packed into the dry measuring cup
 - b.* Firmly packed into the dry measuring cup and level to the top
 - c. Melted on the stove first and then measured
 - d. Mixed with the flour first and then measured

5. A liquid measuring cup:
 - a. Is the same as a dry measuring cup
 - b. Has the same measurements as a dry measuring cup
 - c.* Is quite different from a dry measuring cup

6. Dry ingredients are measured:
 - a.* In a plastic or metal graduated measuring cup
 - b. In a liquid measuring cup
 - c. In a coffee cup
 - d. Both b and c answers are correct

7. Which type of measuring cup needs to have a pour spout on it?
 - a. Dry measuring cup
 - b.* Liquid measuring cup
 - c. Both liquid and dry measuring cups
 - d. Neither one needs it

**CORE TEST QUESTIONS**

8. Which type of measuring cup needs to have some extra space at the top of the cup?
 - a. Dry measuring cup
 - b.* Liquid measuring cup
 - c. Both liquid and dry measuring cups
 - d. Neither one needs it

9. Which type of measuring cup needs to be flat at the top with no extra room above the ingredient?
 - a.* Dry measuring cup
 - b. Liquid measuring cup
 - c. Both liquid and dry measuring cups
 - d. Neither one needs it

10. Which type of measuring cup do you need to use with a spatula to get rid of any excess amount of the ingredient?
 - a.* Dry measuring cup
 - b. Liquid measuring cup
 - c. Both liquid and dry measuring cups
 - d. Neither one needs it

11. When you are measuring liquids in the liquid measuring cup, you:
 - a. Don't have to worry about how the cup sits
 - b. Should sit the cup as close to the stove as possible
 - c.* Should be sure the cup is sitting on a flat surface and read at eye level
 - d. Should put the cup down in the sink

12. Which type of equipment should be used to measure amounts greater than 1/4 cup?
 - a.* Measuring cups
 - b. Measuring spoons
 - c. Mixing bowls
 - d. Sauce pans

13. Which type of equipment should be used to measure amounts less than 1/4 cup?
 - a. Measuring cups
 - b.* Measuring spoons
 - c. Mixing bowls
 - d. Sauce pans

**CORE TEST QUESTIONS**

14. Which of the following ingredients should be sifted before you measure it?
- Sugar
 - Brown sugar
 - * Flour
 - Cornmeal
15. Which of the following ingredients should be firmly packed into the cup when measuring?
- Sugar
 - * Brown sugar
 - Flour
 - Cornmeal
13. The four standard sizes of measuring spoons are:
- Two tablespoons, one tablespoon, one teaspoon, $\frac{1}{2}$ teaspoon
 - One tablespoon, $\frac{1}{2}$ tablespoon, one teaspoon, $\frac{1}{2}$ teaspoon
 - One tablespoon, two teaspoons, one teaspoon, $\frac{1}{2}$ teaspoon
 - * One tablespoon, one teaspoon, $\frac{1}{2}$ teaspoon, and $\frac{1}{4}$ teaspoon
17. When measuring flour, one should use a:
- Coffee cup
 - Paper cup
 - * Dry measuring cup
 - Liquid measuring cup
18. Shortening should be _____ when measured.
- * At room temperature
 - Frozen
 - Refrigerated
 - Heated