



Measuring skills



National FCS Standards

8.2 Demonstrate food safety and sanitation procedures.

8.2.5 Practice good personal hygiene/health procedures, including dental health and weight management and report symptoms of illness.

8.5 Demonstrate professional food preparation methods and techniques for all menu categories to produce a variety of food products that meet customer needs.

8.5.3 Utilize weights and measurement tools to demonstrate knowledge of portion control and proper scaling and measurement techniques.



Materials list

If you are in need of any of the items listed below, go to nascoeducation.com for the latest in kitchen essentials.

- 2 medium-size stainless steel bowls
- Nested measuring cup set
- Measuring spoon set
- Liquid measuring cup
- Custard cup
- Bench scraper
- Rubber spatula
- Oven mitts
- Whisk
- Muffin tin
- Cooling rack
- Dish
- Washcloths, drying towels
- Blueberry muffin recipe (p. 3)
- Proper measuring techniques (p. 4)
- Abbreviations, equivalents, and measures (p. 5)
- Abbreviations and equivalents worksheet (p. 6)

Objectives

Students will...

- Practice personal hygiene, sanitation, and safety in the lab
- Use communication, problem solving, and teamwork skills to prepare a simple recipe
- Identify proper measuring tools and measure ingredients correctly



Day 1

Introduction (5–10 minutes)

Set the stage for your expectations in the kitchen during your laboratory experiences. Do a teacher-led demonstration of hair restraint, apron, washing counters, setting up sink for dish washing, etc.

Activity (15 minutes)

Conduct a demonstration making a simple quick bread such as blueberry muffins (recipe provided). Emphasize measurement, tools, setting the oven temperature, placement of oven racks, and mixing techniques. Place the muffins in the preheated oven and set timer. While muffins are baking, students should be directed to the handout sheet on abbreviations, equivalents, and substitutions.

Students will use the handout sheet to complete the Abbreviations and Equivalents worksheet. Remove muffins from oven and serve a sample to each student.

Closure (5 minutes)

While students sample the muffins, ask them one thing they learned today.

Note: For tomorrow, establish work groups/teams prior to class.

Day 2

Introduction (3–5 minutes)

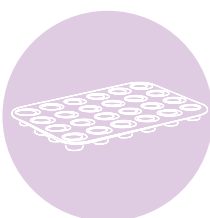
Announce lab teams. Quick reminders of lab procedures, time frame for preparation and clean up, etc.

Activity (35–40 minutes until the end of class)

1. Students prepare for lab
 - Hair restraint
 - Apron
 - Hand washing and cleaning surfaces for lab
2. Students work as a team
 - Measure
 - Mix muffins
 - Prepare pans and add batter
3. Students complete task
 - Place muffins in preheated oven
 - Set timer
 - While baking, student clean up kitchen

Next

- Remove muffins from oven when done, cool, and package in paper sacks for transport.
- Teacher leads inspection of kitchens for lab dismissal.



Blueberry muffin recipe

Ingredients:

1 $\frac{1}{4}$ c. all-purpose flour
1 $\frac{1}{2}$ c. white whole wheat flour
1 $\frac{1}{4}$ c. sugar
1 Tbsp. plus 1 $\frac{1}{2}$ tsp. baking powder
1 egg
1 $\frac{3}{4}$ c. milk
1 $\frac{1}{4}$ c. oil or melted butter
1 c. blueberries, fresh or frozen
Cooking spray



Directions:

1. Preheat oven to 400° F.
2. Spray a muffin tin with cooking spray. Be sure to spray over the sink or wastebasket.
3. Measure all-purpose flour, white whole wheat flour, sugar, and baking powder in a medium-size stainless steel bowl. Whisk dry ingredients together.
4. Crack egg into custard cup.
5. Measure milk in liquid measuring cup.
6. Place egg and milk in another medium-size stainless steel bowl.
7. Whisk the egg and milk together to combine well. Add the oil and mix again.
8. Make a well in the dry mixture and pour the liquid mixture in the well.
9. Using a rubber spatula, combine the liquids with the dry ingredients until lumpy and most of the flour is moistened.
10. Add the blueberries and mix gently.
11. Using a number 20 disher, scoop one level scoop of batter into each muffin receptacle.
12. Place in preheated oven and bake for 18-20 minutes. Check the muffins with a toothpick to be sure they are fully baked. The toothpick should be inserted in the center of the muffin and will come out clean when completely baked.
13. Let muffins cool about 3 minutes and remove from the pan with a spoon.

Recipe adapted from Barbara Johnson, Whitehall, Wisconsin

Proper measuring techniques



| Dry Measuring Cups Are Used to Measure: | |
|---|--|
| Food Item | How to Measure Correctly |
| Flour | <ul style="list-style-type: none"> Stir flour in the canister Heap the flour with a spoon into the dry measuring cup Level the measuring cup with a straight-edged spatula Do not pack or tap the cup of flour! |
| Shortening, butter, and margarine | <ul style="list-style-type: none"> Take small amounts with a rubber scraper and pack into dry measuring cup Level off with a straight-edged spatula |
| White sugar | <ul style="list-style-type: none"> Dip dry measuring cup into the canister and fill to heaping Level off with a straight-edged spatula Do not tap the cup! |
| Brown sugar | <ul style="list-style-type: none"> Fill the dry measuring cup and press down with the back of the spoon to pack firmly Sugar should hold its shape when turned out of the cup! |
| Cut up foods such as bread crumbs, chopped celery, onion, nuts, marshmallows, chocolate chips, etc. | <ul style="list-style-type: none"> Pack lightly into the measuring cup until level with the top edge of the cup |



| Liquid Measuring Cups Are Used to Measure: | |
|---|--|
| Food Item | How to Measure Correctly |
| Liquids | <ul style="list-style-type: none"> Place measuring cup on table or counter Bend down to look at the mark at eye level as you pour slowly Remember to measure the bottom of the meniscus |

| Measuring Spoons Are Used to Measure: | |
|--|---|
| Food Item | How to Measure Correctly |
| Salt | <ul style="list-style-type: none"> Pour salt into a small dish Dip into it with a measuring spoon Level the measuring spoon with a straight-edged spatula |
| Baking powder, soda, cornstarch, or spices | <ul style="list-style-type: none"> Stir to loosen the powder in container Heap the powder or spice into the measuring spoon Level the measuring spoon with a straight-edged spatula |
| Vanilla, extracts, flavorings | <ul style="list-style-type: none"> Pour vanilla into measuring spoon from the bottle Be sure to hold the measuring spoon over a small bowl while measuring in case of spills Do NOT measure over your mixing bowl contents! |

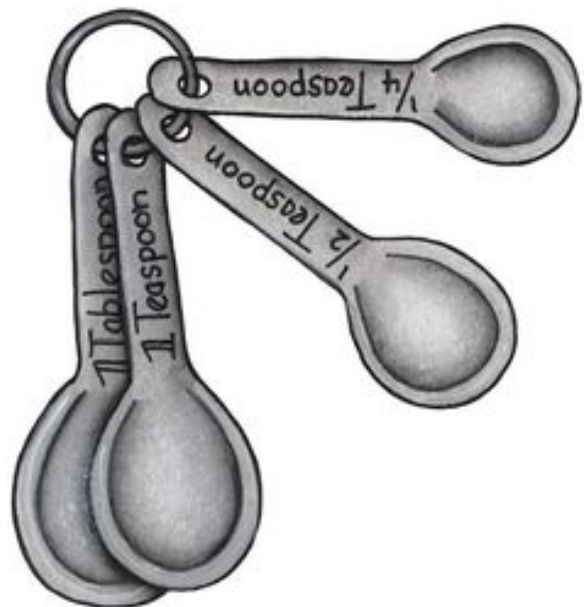


Abbreviations, equivalents & measures

| Common Abbreviations | |
|----------------------|-------------|
| Tablespoon | Tbsp. or T. |
| Teaspoon | tsp. or t. |
| Cup | C. or c. |
| Few grains | Fg |
| Degrees Fahrenheit | °F |
| Pint | pt. |
| Quart | qt. |
| Ounce | oz. |
| Gallon | gal. |
| Pound | lb. or lbs. |
| Minute | min. |
| Hour | hr. |
| Dozen | doz. or dz. |

| Equivalent Weights and Measures | |
|---------------------------------|------------------------------|
| Few grains | Less than $\frac{1}{8}$ tsp. |
| Dash | 2-3 drops |
| 3 t. | 1 T. |
| 4 T. | $\frac{1}{4}$ c. |
| 8 T. | $\frac{1}{2}$ c. |
| 12 T. | $\frac{3}{4}$ c. |
| 16 T. | 1 c. |
| 2 c. | 1 pt. |
| 4 c. | 1 qt. |
| 2 pt. | 1 qt. |
| 4 qt. | 1 gal. |

| Equivalent Food Weights and Measures | |
|--------------------------------------|--------------------------------------|
| 1 lb. butter | 2 c. or 4 sticks or 16 oz. |
| $\frac{1}{2}$ lb. butter | 1 c. or 2 sticks or 8 oz. |
| $\frac{1}{4}$ lb. butter | $\frac{1}{2}$ c. or 1 stick or 4 oz. |



Abbreviations & equivalents – worksheet

Name: _____ Score: _____ / 35

Instructions: Using the resource sheet, answer the following problems on abbreviations and equivalents. 1 pt. each.

Abbreviations

| Measurement Term | Abbreviation | Abbreviation |
|------------------|--------------|--------------|
| Tablespoon | | |
| Teaspoon | | |
| Cup | | |
| Pound | | |
| Ounce | | |
| Pint | | |
| Quart | | |
| Gallon | | |

Measurements and Equivalents

| Measurement | Equivalent | Measure |
|--------------------|---------------------------|----------------------------------|
| 1 Tablespoon | | in tsp. |
| $\frac{1}{4}$ cup | | in Tbsp. |
| $\frac{1}{2}$ cup | | in Tbsp. |
| 1 cup | | in tsp. |
| 1 cup | | in Tbsp. |
| 1 pint | | in cups |
| 1 pint | | in Tbsp. |
| 1 quart | | in cups |
| 1 quart | | in pints |
| 1 gallon | | in quarts |
| 1 gallon | | in cups |
| 1 gallon | | in pints |
| 1 lb. | | in ounces |
| 1 lb. | | in sticks |
| $\frac{1}{2}$ lb. | | in sticks |
| $\frac{1}{4}$ lb. | | in sticks |
| 1 cup | | in sticks |
| $\frac{1}{2}$ cup | | in sticks |
| $\frac{1}{4}$ cup | | in sticks |
| $\frac{3}{4}$ cup | | in sticks |
| $\frac{3}{4}$ cup | _____ cup + _____ cup | Which cups are used? |
| $\frac{3}{4}$ tsp. | _____ tsp. + _____ tsp | Which measuring spoons are used? |

