Homemade Baking Powder Biscuits

2 c. flour

3/8 c. sugar (_____c. + _____ T.)

3/4 tsp. salt

1 1/2 tsp. baking powder

3/4 stick of butter

1/2 c. milk

1/2 egg

Tools/ Equipment:

Mis en place:

***Notes: Show teacher sugar and butter measurements before adding to mixing bowl. Beat an egg and put 1/2 on the side.*

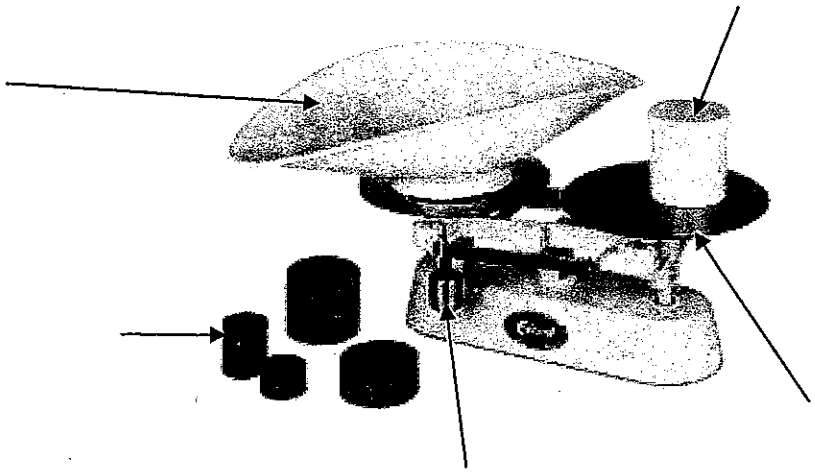
Sift all dry ingredients. Cut in butter into dry ingredients until mixture resembles small peas. Add milk and egg to dry ingredients, mixing lightly. Do not overmix. Roll out dough to 1 1/2 inch thickness and cut with biscuit cutters. Brush with egg wash (1/2 egg mixed with equal amounts of water). Bake at 400 degrees for 15-18 minutes.

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Baking - Quickbreads

Baker's Scale:



How to use a baker's scale:

1. Place product tray on left platform. Use counterweight on right platform to balance the scale so that each platform is the same level as each other.
2. Set the weight of the desired measurement by moving the ounce weight on the horizontal beam. The horizontal beam can weigh a maximum of ___ ounces.
3. If needed, place a weight on the right platform. For example, if you need 1 pound 6 oz. of flour, you would set the ounces to 6 and add a 1 pound weight to the right platform.
4. Add the product to be measured into the product tray until both platforms are balanced.

Exit Pass:

1. What 4 culinary terms were used in the recipe directions and what do each of these terms mean (describe the process or give a definition)

2. What is the weight of 2 cups of flour? _____ What is the weight of 3/8 c. of sugar? _____

Chocolate Chip Muffins

5 oz. flour

1 1/2 tsp. baking powder

1/4 tsp salt

1/2 egg

3.5 oz. sugar

2 Tbsp. butter melted

5 oz. sour cream

3/4 c. chocolate chips

Tools/ Equipment:

Mis en place:

Mix flour, baking powder, salt and chocolate chips. Beat egg in another bowl until well-combined and light colored (about 20 seconds). Add sugar to the egg and whisk vigorously until thick and homogeneous (about 30 seconds). Add half of melted butter and mix well. Add remaining melted butter. Fold in half of the sour cream to just combine the ingredients. Fold in the remaining sour cream until just combined. Add chocolate chips to the bowl of dry ingredients and gently toss to combine. Add dry ingredients into sour cream mixture (small spots of flour may remain and batter will be thick). Do Not Overmix!! Drop half of the batter into greased muffin pan. With the remaining batter, mix for a few more minutes and spoon into muffin pan. Bake until light golden brown, about 25 to 30 minutes. Take 1 muffin from each batch (lightly mixed and mixed well) and cut in half. Compare the two and record the results.

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Baking

Exit Pass:

Muffin Comparison

Lightly Mixed	Mixed additional 2 minutes
Description:	Description:
Draw a picture of what it looks like:	Draw a picture of what it looks like:

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Sour Cream Coffee Cake

Cake:	1/2 c. butter	1 c. flour
	1/2 c. sugar	1/2 tsp. baking powder
	1 egg	1/2 tsp. baking soda
	1/2 tsp. vanilla	1/4 tsp. salt
	4 oz. sour cream	
Topping:	1 1/2 Tbsp. brown sugar	1/2 tsp. cinnamon
	1/4 c. chopped nuts	

Tools/ Equipment:

Mis en place:

Cream butter and sugar. Add eggs, vanilla and sour cream. Add sifted dry ingredients and mix well. Pour half the batter in a greased square cake pan. Sprinkle half of the topping on the batter. Pour the remaining batter. Sprinkle the remaining topping on the batter. Bake at 350° for 20-25 minutes.

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Baking

Exit Pass:

1. What is the difference between a batter and a dough?

2. What is the difference between baking powder and baking soda?

Name: _____

Why Do Baked Goods Rise?

The answer is leavening agents. A leavening agent is a substance that causes baked goods to rise. There are 4 basic types that include air, steam, chemical (baking powder and baking soda) and yeast.

Air

- Air is added in the mixing process. It gets trapped in a mixture by sifting flour, creaming fat and sugar, or beating egg whites and batter.
- Oven heat makes the air expand and the product rises.

Steam

- Created during the baking process when water evaporates to steam and expands.
- A high baking temperature is used to create steam.

Chemical:

1. Baking Soda
   - Must be used with an acid like buttermilk, sour cream and fruit juices to give off CO^2 gas.
2. Baking Powder
   - Combination of baking soda, an acid and a moisture absorber. When mixed with a liquid it gives off CO^2.

Yeast

- A living organism
- Needs food, moisture, and warmth to grow. As it grows through the fermentation process, it gives off CO^2.

Activity:

Which leavening agent (baking powder, baking soda, yeast) gives off the most carbon dioxide gas?

I predict _____ will give off the most CO^2 because _____

_____.

Directions: For each labeled bottle, mix together the ingredients, pour into the bottle, and fasten on balloon (stretch out by blowing up several times). Wait several minutes and observe the results. Record your results. Rinse out bottles between experiments.

Bottle #1: Baking Powder	Bottle #2: Baking Soda	Bottle #3: Yeast
Experiment A: Mix together 1 tsp. baking powder and 1 Tbsp. **cold** water **Experiment B:** Mix together 1 tsp. baking powder and 1 Tbsp. **warm** water **Experiment C:** Mix together 1 tsp. baking powder and 1 Tbsp. vinegar	**Experiment D:** Mix together 1 tsp. baking soda and 1 Tbsp. **cold** water **Experiment E:** Mix together 1 tsp. baking soda and 1 Tbsp. **warm** water **Experiment F:** Mix together 1 tsp. baking soda and 1 Tbsp. vinegar	**Experiment G:** Mix together 2 1/4 tsp. yeast and 2 Tablespoons sugar in 1 cup very warm water

What Do I See?

Observation Record: Which sample gives off the most carbon dioxide?

Bottle #1: Baking Powder	Bottle #2: Baking Soda	Bottle #3: Yeast
Experiment A: Mix together 1 tsp. baking powder and 1 Tbsp. **cold** water Observation:	**Experiment D**: Mix together 1 tsp. baking soda and 1 Tbsp. **cold** water Observation:	**Experiment G**: Mix together 2 1/4 tsp. yeast and 2 Tablespoons sugar in 1 cup very warm water
Experiment B: Mix together 1 tsp. baking powder and 1 Tbsp. **warm** water Observation:	**Experiment E**: Mix together 1 tsp. baking soda and 1 Tbsp. **warm** water Observation:	What would happen if you mixed the yeast and sugar with cold water?
Experiment C: Mix together 1 tsp. baking powder and 1 Tbsp. vinegar Observation:	**Experiment F**: Mix together 1 tsp. baking soda and 1 Tbsp. vinegar Observation:	What would happen if you took away the sugar?

_____ produced the most carbon dioxide, followed by _____.

Pizza Dough

2 1/4 tsp. yeast (1 packet)
1 1/4 c. warm water
3 1/2 c. flour
3 Tbsp. oil
2 tsp. sugar
1 1/2 tsp. salt

Tools/ Equipment:

Mis en place:

Day 1: Dissolve yeast in warm water until bubbly. Add flour, oil, and sugar and mix well. Add salt. Place dough in a oiled ziplock bag and leave a one inch opening. Refrigerate.

Day 2: Remove from refrigerator and set it in room temperature to allow dough to rise until it is double in bulk. Roll out very thin and place on a sheet pan. Prebake in 400° oven till light brown if desired.

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Baking – Yeast Dough

Steps in Making Yeast Dough

Read pages 640-649. Write a short description about each step.

1. Scaling ingredients: _____
2. Mixing and kneading: _____
3. Fermentation (**bowl**-1st rise): _____
4. Dividing dough: _____
5. Rounding dough: _____
6. Bench Rest (**bench** – 2nd rise): _____
7. Shaping dough: _____
8. Panning dough: _____
9. Final proofing (**box**-3rd and final rise): _____
10. Baking dough: _____
11. Cooling dough: _____
12. Packaging dough: _____

Exit Pass:

1. What is the food that is used to grow the yeast?

2. What gas is given off to make the dough rise?

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Homemade Soft Pretzel Dough

3/4 c. warm water
1 1/2 tsp. sugar
1 tsp. kosher salt
1/2 packet active dry yeast (1 1/8 tsp.)
11 ounces flour
1 ounce unsalted butter, melted
Oil for pan
5 cups water
1/3 cup baking soda
1 large egg yolk with 1 Tbsp. water
pretzel salt

Tools/ Equipment:

Mis en place:

Day 1 Instructions: Combine water, sugar and kosher salt in a large bowl. Sprinkle the yeast on top and allow to sit for 5 minutes or until the mixture begins to foam. Add the flour and butter. Mix until well combined. Knead the dough until smooth, approximately 5 minutes. Remove the dough and place in an oiled ziplock bag (let sit in a warm area for 50 minutes or until the dough has doubled in size).

Day 2 Instructions: Line a half sheet pan with parchment paper and lightly brush with oil. Bring water and baking soda to a rolling boil. In the meantime, turn dough out onto a slightly oiled work surface and divide dough into even size pieces. Roll out each piece of dough to make a rope. Place on oiled sheet pan. Shape or cut into desired pieces. Place pretzels in boiling water one by one for 30 seconds. Remove pretzels from water using a flat spatula. Return pretzels to sheet pan. Brush with egg wash and sprinkle with pretzel salt. Bake at 450° until dark golden brown, approximately 12 to 14 minutes.

Exit Pass:

1. Outline the steps in kneading. Draw a picture to represent each of the steps. Refer to page 640 in Culinary Essentials Textbook.

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Pretzel Flavorings

Cinnamon Sugar butter 1/4 cup sugar 1/2 Tbsp. cinnamon Brush pretzels with melted butter. Roll in cinnamon and sugar mixture.	Parmesan (served with Marinara Sauce) butter, melted 1 tsp. dried Italian Seasoning 1 tsp. grated parmesan cheese 1/4 tsp. garlic powder Brush pretzels with melted butter. Roll in Italian Seasoning, parmesan and garlic powder mixture. Eat with marinara dipping sauce.
Honey Mustard Sauce 1/4 cup Dijon mustard 2 Tbsp. + 2 tsp. honey 1 tsp. sugar Mix honey and mustard. Taste. Add sugar if needed.	Marinara Dipping Sauce 1 tsp. olive oil 1 clove garlic, minced 1/2 cup bottled marinara sauce 1 leaf basil, minced Heat oil in a small saucepan. Add garlic and cook for one minute. Stir in marinara and basil. Allow sauce to come to a slow boil for about 15 minutes.

Tools/ Equipment:

Mis en place:

Exit Pass:

1. Did the honey mustard sauce need the sugar? Explain.

2. Which dipping sauce did you like best? Why?

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Chocolate Chip Cookies

½ pound butter
2 eggs
1 tsp. salt
1 tsp. baking soda
1 ½ cups sugar
1 tsp. vanilla extract
2 ½ cups flour
2 cups chocolate chips

Tools/ Equipment:

Mis en place:

Instructions: Cream butter and sugar. Add eggs one at a time and mix well. Add vanilla extract. In another bowl, mix salt, flour and baking soda. Add flour mixture a little at a time to butter mixture. Add chocolate chips. Place rounded spoonfuls of dough on ungreased cookie sheets. Bake at 325° for 15-20 minutes. Remove from cookie sheet and cool.

Exit Pass:

1. Based on the cookie characteristics and ingredients in this recipe, what kind of cookie is this (crispy, chewy or soft)? Explain how you came to this conclusion.

2. What method was used for mixing?

3. What type of cookie is this (rolled, bar, drop, molded, etc.)?

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Lemon Bars

Crust:
½ cup butter
1 1/3 cup flour
1/4 cup granulated sugar

Filling:
2 eggs
3/4 cup granulated sugar
2 Tbsp. flour
1/4 tsp. baking powder
3 1/2 Tbsp. lemon juice

Tools/ Equipment:

Mis en place:

Instructions Mix together crust ingredients with a fork until crumbly. Press into a square cake pan. Bake at 350° for 20 minutes. Do not brown (crust will remain white). In another bowl, whisk together filling ingredients until well mixed. Pour over pre-baked crust. Return to oven and bake an additional 20 minutes. Remove from oven and sprinkle with powdered sugar. Let bars cool before cutting.

Exit Pass (Time Management and GLOs):

1. Were you able to complete the lab from start to clean up before the end of the period? Explain how this was or was not accomplished (include times that crust and filling was put in and removed from oven).

2. Was your recipe a quality product? What evidence do you have?

3. How did you demonstrate that you were a self-directed learner?

4. What did you do to effectively contribute to your group today?

Lab Grade: _____ / 20 points
Lab Write-Up: _____ / 10 points
Total: _____ / 30 points

Name: _____
Date: _____ Period: _____

Cornflake Cookies

1/2 cup butter
1/4 cup + 2 tablespoons sugar
1 teaspoon vanilla extract
1 cup flour
1 1/2 cups cornflakes

Tools/ Equipment:

Mis en place:

Cream butter and sugar. Add in vanilla and flour. Mix well. Form dough into large marble-size pieces. Roll in bowl of crushed cornflakes. Place on ungreased sheet pan. Flatten slightly using bottom of a glass dipped in flour. Bake at 350° for 10 to 15 minutes until light golden yellow but not brown.

Exit Pass – What are the different types of cookies?

Cookie varieties are classified by the way they are prepared. Identify the characteristics of each and an example of what we prepared in lab.

Cookie Type	Characteristics	Examples
Drop		
Icebox		
Bar		
Cut-out or Rolled	Made from a firm dough that is rolled out and cut into various shapes.	
Pressed	Also referred to as spritz cookies. Made from a soft dough pushed through a cookie press.	We have not made pressed cookies.
Wafer	Extremely thin and delicate. Made from a thin batter, spread on a baking sheet and baked.	We have not made wafer cookies.

COOKIE CHARACTERISTICS AND THEIR CAUSES

CRISPNESS

Cookies are crisp if they are very low in moisture. The following factors will contribute to crispness:

1. Low proportion of liquid in the mix. Most crisp cookies are made from a stiff dough.
2. High sugar and fat content.
3. Evaporation of moisture during baking due to high temperatures and/or long baking.
4. Small size or thin shape, so the cookie dries faster during baking.
5. Proper storage. Crisp cookies can become soft if they absorb moisture.

SOFTNESS

Softness is the opposite of crispness, so it has the opposite causes, as follows:

1. High proportion of liquid in mix.
2. Low sugar and fat.
3. Honey, molasses, or corn syrup included in formulas. These sugars are hygroscopic, which means they readily absorb moisture from the air or from their surroundings.
4. Underbaking.
5. Large size or thick shape, therefore retaining more moisture.
6. Proper storage. Soft cookies can become stale and dry if not tightly covered or wrapped.

CHEWINESS

Moisture is necessary for chewiness, but other factors are also required. In other words, all chewy cookies are soft, but not all soft cookies are chewy.

1. High sugar and liquid content, but low fat content.
2. High proportion of eggs.
3. Strong flour, or gluten developed during mixing.

SPREAD

Spread is desireable in some cookies, while others must hold their shape. Several factors contribute to spread or lack of spread.

1. *Sugar.* High sugar content increases spread. Coarse granulated sugar increases spread, whereas fine sugar or confectioners' sugar reduces spread.

2. *Leavening.* High baking soda or baking ammonia content encourages spread. So does long creaming which incorporates air.

3. *Temperature.* Low oven temperature increases spread. High temperature decreases spread because the cookie sets up before if has a chance to spread too much.

4. *Liquid.* A slack batter-that is, one with a high liquid content-spreads more than a stiff dough.

5. *Flour.* Strong flour or activation of gluten decreases spread.

6. *Pan grease.* Cookies spread more if baked on a heavily greased pan.

Name: _____

Cookie Characteristics and Their Causes

1. What are the four characteristics of cookies?

2. If a cookie recipe calls for a small amount of liquid but uses a large amount of butter, what would you expect the cookie characteristics to be?

3. When baking crisp cookies, why is it important to have a long baking time or a high baking temperature?

4. What kind of cookie will result from a cookie recipe that contains a large portion of eggs, liquid and sugar but has very little fat?

5. In what two types of cookies is spread undesirable characteristic?

6. What kind of cookies are large, thick-shaped and contain low amounts of sugar and fat?

Cookie Labs – Characteristics

List the cookies we have made in labs so far, its characteristics and the factors that influenced those characteristics.

Cookie	Characteristics	Factors that Influenced the characteristics