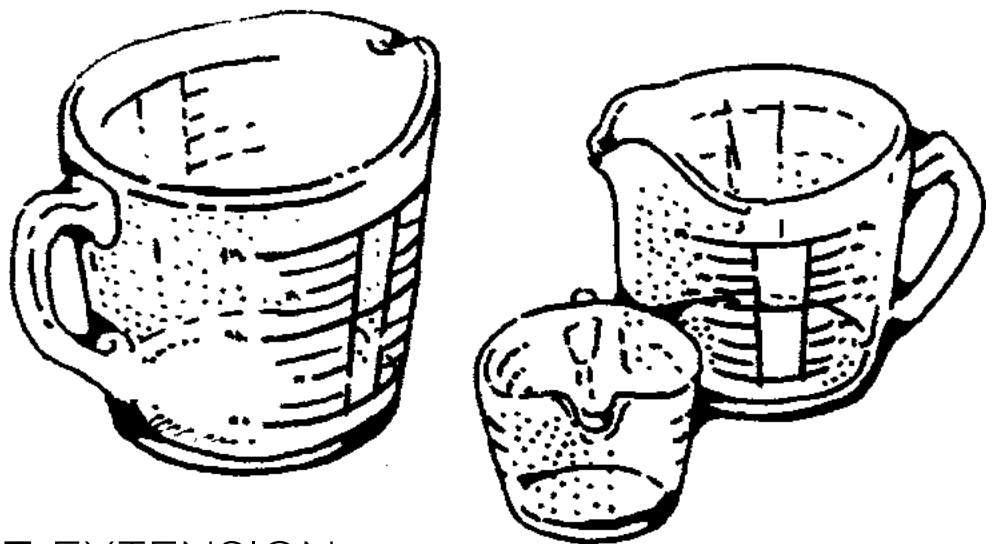




BEGINNING BAKING 1

Beginning Baking 1



NDSU EXTENSION
SERVICE

North Dakota State University, Fargo, North Dakota

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Message to 4-H Members

Baking I is to help first-year baking members learn baking basics — nutrition, measuring and kitchen safety. The project is organized to cover one topic or food at each club meeting.

You will learn the basics of baking by making quick breads and cookies.

You will learn:

- About “MyPlate” and the importance of grain foods in your daily diet
- How to measure dry and liquid ingredients accurately
- Definitions of basic baking terms
- Basic kitchen and food safety practices
- How to make:
Biscuits
Muffins and muffin variations
Pancakes
Cookies: sugar, chocolate chip, chocolate drop, oatmeal and peanut butter
- How to judge the quality of each food product
- About jobs and careers in food preparation

You should:

- Learn to judge the quality of each food product
- Attend 4-H club meetings and baking project meetings as available in your county
- Give a demonstration, teaching others baking basics
- Keep a record of your work on this project
- Participate in leadership and citizenship activities

Suggested Exhibits

- Three biscuits
- Three plain muffins
- Three chocolate chip cookies
- Three sugar cookies – round, plain, without icing
- Three chocolate drop cookies
- Three oatmeal cookies
- Three peanut butter cookies

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Eating Well

MyPlate

“MyPyramid” has been rebuilt and it’s now a plate! Here’s what the colors stand for:

- orange - grains
- green - vegetables
- red - fruits
- blue - dairy foods
- purple - protein foods

The U.S. Department of Agriculture (USDA) wanted an easier way to remind people to eat healthfully. MyPlate shows the five food groups using a familiar picture: a place setting with a plate, cup and fork.

MyPlate Speaks

Let’s look at some of the other messages this new symbol is trying to send:

Balancing Calories

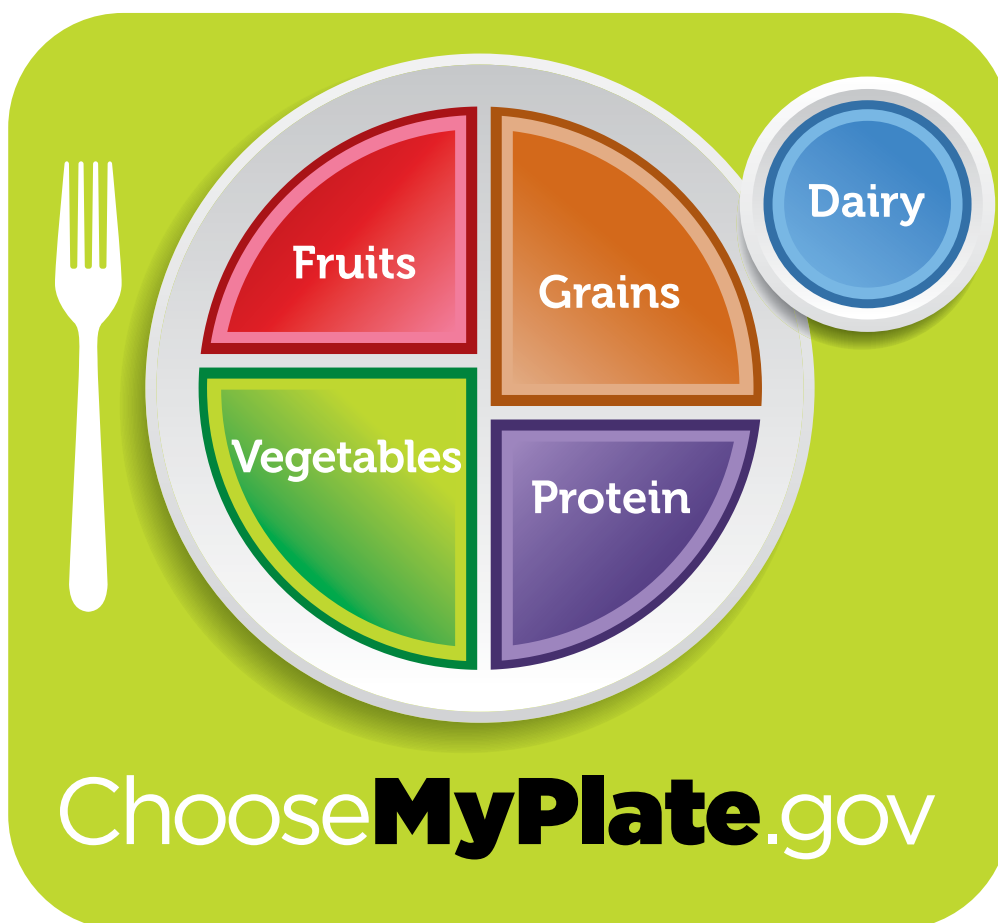
- Enjoy your food, but eat less.
- Avoid oversized portions.

Foods to Increase

- Make half your plate fruits and vegetables.
- Make at least half your grains whole grains.
- Switch to fat-free or low-fat (1%) milk.

Foods to Reduce

- Compare sodium in foods such as soup, bread and frozen meals. Choose foods with lower numbers.
- Drink water instead of sugary drinks.



Make it personal.

Through the USDA's MyPlate website, you can get personalized recommendations about the mix of foods you need to eat and how much you should be eating.

How Much Do I Need to Eat?

Everyone wants to know how much he or she should eat to stay healthy. That's a tricky question, though. It depends on your age, whether you're a girl or boy, and how active you are. Kids who are more active burn more *calories*, so they need more calories.

Grains

Grains are measured in ounce equivalents. What are they? Ounce equivalents are just another way of showing a serving size.

Here are ounce equivalents for common grain foods. An ounce equivalent equals:

- 1 piece of bread
- ½ cup of cooked cereal, such as oatmeal
- ½ cup of rice or pasta
- 1 cup of cold cereal

- 4- to 8-year-olds need 4 to 5 ounce equivalents each day.
- 9- to 13-year-old girls need 5 ounce equivalents each day.
- 9- to 13-year-old boys need 6 ounce equivalents each day.

And one last thing about grains: Make at least half your grain food choices whole grains, such as 100 percent wheat bread, brown rice and oatmeal.

Vegetables

Of course, you need your vegetables, especially those dark green and orange ones. But how much is enough? Vegetable servings are measured in cups.

- 4- to 8-year-olds need 1½ cups of veggies each day.
- 9- to 13-year-old girls need 2 cups of veggies each day.
- 9- to 13-year-old boys need 2½ cups of veggies each day.

Fruits

Sweet, juicy fruit definitely is part of a healthy diet. Here's how much you need:

- 4- to 8-year-olds need 1 cup to 1½ cups of fruit each day.
- 9- to 13-year-old girls need 1½ cups of fruit each day.
- 9- to 13-year-old boys need 1½ cups of fruit each day.

Dairy

Dairy foods are rich in calcium to build strong bones to last a lifetime.

- 4- to 8-year-olds need 1 to 2 cups of milk (or other calcium-rich food) each day.
- 9- to 13-year-old girls need 3 cups of milk (or other calcium-rich foods) each day.
- 9- to 13-year-old boys need 3 cups of milk (or other calcium-rich foods) each day.

If you want something other than milk, you can substitute yogurt, cheese or calcium-fortified orange juice — just to name a few.

Protein Foods

These foods contain iron and lots of other important nutrients. Like grains, these foods are measured in ounce equivalents.

An ounce equivalent of this group would be:

- 1 ounce of meat, poultry or fish
- ¼ cup cooked dry beans
- 1 egg
- 1 tablespoon of peanut butter
- a small handful of nuts or seeds

- 4- to 8-year-olds need 3 to 4 ounce equivalents each day.
- 9- to 13-year-old girls need 5 ounce equivalents each day.
- 9- to 13-year-old boys need 5 ounce equivalents each day.

Whoa! That's a lot to swallow. The good news is that your mom, dad and the other grownups in your life will help you eat what you need to stay healthy. Here's more good news: You don't have to become a perfect eater overnight.

*Adapted with permission from
http://kidshealth.org/kid/stay_healthy/food/pyramid.html*

choose MyPlate

10 tips to a great plate



Making food choices for a healthy lifestyle can be as simple as using these 10 Tips.

Use the ideas in this list to *balance your calories*, to choose foods to *eat more often*, and to cut back on foods to *eat less often*.

1 balance calories

Find out how many calories YOU need for a day as a first step in managing your weight. Go to www.ChooseMyPlate.gov to find your calorie level. Being physically active also helps you balance calories.

2 enjoy your food, but eat less

Take the time to fully enjoy your food as you eat it. Eating too fast or when your attention is elsewhere may lead to eating too many calories. Pay attention to hunger and fullness cues before, during, and after meals. Use them to recognize when to eat and when you've had enough.



3 avoid oversized portions

Use a smaller plate, bowl, and glass. Portion out foods before you eat. When eating out, choose a smaller size option, share a dish, or take home part of your meal.

4 foods to eat more often

Eat more vegetables, fruits, whole grains, and fat-free or 1% milk and dairy products. These foods have the nutrients you need for health—including potassium, calcium, vitamin D, and fiber. Make them the basis for meals and snacks.



5 make half your plate fruits and vegetables

Choose red, orange, and dark-green vegetables like tomatoes, sweet potatoes, and broccoli, along with other vegetables for your meals. Add fruit to meals as part of main or side dishes or as dessert.

6 switch to fat-free or low-fat (1%) milk

They have the same amount of calcium and other essential nutrients as whole milk, but fewer calories and less saturated fat.



7 make half your grains whole grains

To eat more whole grains, substitute a whole-grain product for a refined product—such as eating whole-wheat bread instead of white bread or brown rice instead of white rice.

8 foods to eat less often

Cut back on foods high in solid fats, added sugars, and salt. They include cakes, cookies, ice cream, candies, sweetened drinks, pizza, and fatty meats like ribs, sausages, bacon, and hot dogs. Use these foods as occasional treats, not everyday foods.

9 compare sodium in foods

Use the Nutrition Facts label to choose lower sodium versions of foods like soup, bread, and frozen meals. Select canned foods labeled "low sodium," "reduced sodium," or "no salt added."



10 drink water instead of sugary drinks

Cut calories by drinking water or unsweetened beverages. Soda, energy drinks, and sports drinks are a major source of added sugar, and calories, in American diets.

make half your grains whole



10 tips to help you eat whole grains

Any food made from wheat, rice, oats, cornmeal, barley, or another cereal grain is a grain product. Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits are examples. Grains are divided into two subgroups, **whole grains** and **refined grains**. Whole grains contain the entire grain kernel—the bran, germ, and endosperm. People who eat whole grains as part of a healthy diet have a reduced risk of some chronic diseases.

1 make simple switches

To make half your grains whole grains, substitute a whole-grain product for a refined-grain product. For example, eat 100% whole-wheat bread or bagels instead of white bread or bagels, or brown rice instead of white rice.



2 whole grains can be healthy snacks



Popcorn, a whole grain, can be a healthy snack. Make it with little or no added salt or butter.

Also, try 100% whole-wheat or rye crackers.

3 save some time

Cook extra bulgur or barley when you have time. Freeze half to heat and serve later as a quick side dish.

4 mix it up with whole grains

Use whole grains in mixed dishes, such as barley in vegetable soups or stews and bulgur wheat in casseroles or stir-fries. Try a quinoa salad or pilaf.

5 try whole-wheat versions

For a change, try brown rice or whole-wheat pasta. Try brown rice stuffing in baked green peppers or tomatoes, and whole-wheat macaroni in macaroni and cheese.



6 bake up some whole-grain goodness

Experiment by substituting buckwheat, millet, or oat flour for up to half of the flour in pancake, waffle, muffin, or other flour-based recipes. They may need a bit more leavening in order to rise.

7 be a good role model for children

Set a good example for children by serving and eating whole grains every day with meals or as snacks.

8 check the label for fiber

Use the Nutrition Facts label to check the fiber content of whole-grain foods. Good sources of fiber contain 10% to 19% of the Daily Value; excellent sources contain 20% or more.



9 know what to look for on the ingredients list

Read the ingredients list and choose products that name a whole-grain ingredient **first** on the list. Look for “whole wheat,” “brown rice,” “bulgur,” “buckwheat,” “oatmeal,” “whole-grain cornmeal,” “whole oats,” “whole rye,” or “wild rice.”

10 be a smart shopper

The color of a food is not an indication that it is a whole-grain food. Foods labeled as “multi-grain,” “stone-ground,” “100% wheat,” “cracked wheat,” “seven-grain,” or “bran” are usually not 100% whole-grain products, and may not contain **any** whole grain.



Why Do We Eat?

We know everyone needs food to live.
But why?

Food gives you two things:

- Energy to move and to do things
- Stuff to help you grow and stay healthy

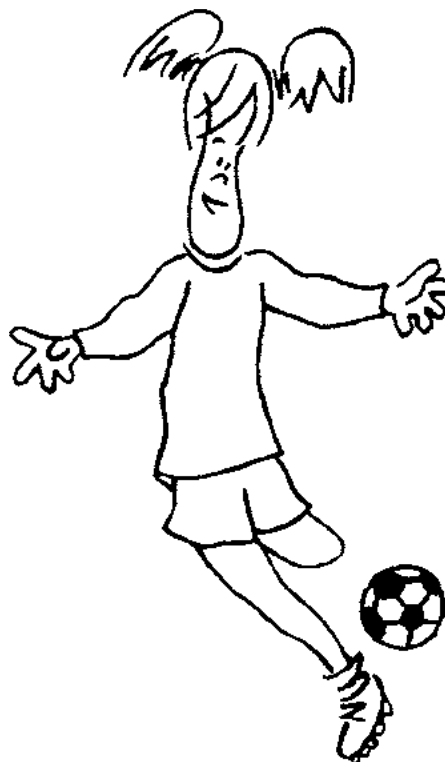
Just like a car needs fuel to run, your body needs food for energy. Without energy, you couldn't run or play.

Besides giving you energy, food helps you grow and heal. When you skin a knee or an elbow, your body needs to fix or replace the skin you scraped off. If you get sick, your body needs to fight the infection, rebuild weak body parts and get well. Your body also keeps you from getting too hot or cold. Nutrients are the things in food that help your body perform all these functions. So your body doesn't need just the food, it needs the nutrients in the food.

Nutrients — Who Needs Them?

Nutrients are chemical substances that your body gets from the food you eat. Each nutrient has a different job to do. They all are necessary in specific amounts, but your body knows how to handle it all! You're an amazing machine!

- Vitamin A helps you see in the dark.
- Water regulates body temperature.
- Calcium builds strong bones and teeth.
- Fat gives you energy and carries some vitamins to where the body needs them.
- Iron helps your blood carry oxygen to all parts of your body — even your toes!
- Protein builds and repairs muscles and other parts of your body.
- Vitamin C helps heal cuts.
- Carbohydrates give you energy to grow, move and do things.



Getting Ready to Bake

Before you begin to prepare food, you need to follow a few rules:

- Read the entire recipe, including mixing and baking instructions, before you begin.
- Assemble the ingredients and equipment.
- Use fresh ingredients when preparing baked products.
- Learn how to use the equipment safely.
- Follow the recipe directions.
- Measure accurately.
- Use a potholder or oven mitt when lifting pans from a burner or the oven.
- Pull the oven rack out using a potholder instead of reaching into the oven.

Food Safety Basics

- Wipe up spills as soon as they happen.
- Wash hands with soap under warm water for at least 20 seconds.
- Pull hair back neatly.
- Use clean towels and dishcloths.
- Raw cookie dough may have salmonella bacteria, which can cause food poisoning, so never taste raw cookie dough.
- Never put a spoon in your mouth, then back in the food.
- Don't lick your fingers.
- Keep all cooking surfaces clean.
- Thoroughly clean all dishes, equipment and utensils with hot, soapy water after use.
- Leave the kitchen clean.



Measure for Success

To be successful in baking, one of the first things to learn is to measure accurately. All recipes in this project book have been tested with the correct proportions based on standard measurements. When you add a little more sugar or a little less baking powder, your products just aren't as good. All measurements are level unless the recipe states that they are rounded or heaping. Using standard measuring cups and measuring spoons is best.

Using measuring cups: Measure liquids with glass cups that have headspace. Measure dry ingredients with cups that come in a nesting set of 1 cup, ½ cup, ⅓ cup and ¼ cup. Metal or glass measuring cups and spoons are better than plastic, which can crack or bend out of shape.

Using measuring spoons: When you measure liquid ingredients, pour them carefully to avoid spilling. When you measure dry ingredients, level them as you would with measuring cups. Don't hold measuring spoons over your other ingredients while you are putting ingredients into them.

Kitchen Safety

Having fun while you cook is OK. After all, that's what it's all about! But accidents can happen when you're:

- In a hurry
- Messy and not cleaning up spills
- Not paying attention to what you're doing
- Using machines you don't know how to use
- Working in the kitchen without permission

What kind of accidents happen most often?

- burns
- cuts
- falls

Flour

Cooks make more errors in measuring flour than any other ingredient. You can put as much as 50 percent more flour into a cup if it is packed rather than sifted. Not all standard recipes are written for sifted flour, but if you choose, you can sift flour for a lighter product. Sift a little more flour than you need onto a sheet of waxed paper. Spoon the flour into the measuring cup until it's full to the top. Pile a little extra flour on top, but be careful not to pack it. Then level the top with a straight knife or spatula. Any flour left on the paper can be returned to the canister.



Baking Powder

Use double-acting baking powder for recipes in this book. Stir the baking powder before measuring it to activate the ingredients.

Shortening

- Pack firmly into a dry measuring cup with a rubber spatula.
- Level with the straight edge of a knife or metal spatula.
- Remove with a rubber spatula.



Brown Sugar

- Break up any lumps by squeezing or rolling.
- Spoon into a dry measuring cup.
- Pack it down firmly with the back of a spoon so that it keeps the shape of the cup when turned over.
- Level with the straight edge of a metal spatula or knife.



Liquids

- Place the liquid measuring cup on a flat counter or table.
- Fill to the mark for the amount of liquid you need.
- Bend down to check that the bottom of the liquid line is at the mark for the amount you need.
- Use measuring spoons to measure less than $\frac{1}{4}$ cup.
- Remove sticky liquids such as molasses, corn syrup and oil with a rubber spatula.

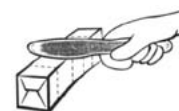


Sugar

- Spoon sugar into dry measuring cup.
- Use the straight edge of a knife or a metal spatula to level off the top.

Margarine or Butter (sticks)

Cut using measurement marks on the wrapper as a guide.



Liquid Extracts and Juices

- Pour the amount needed into the appropriate measuring spoon.
- Never measure over the mixing bowl or pan. Hold it over a small cup.



Oven Temperatures

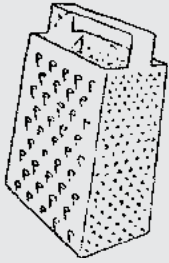
If baked goods are of poor quality, underbaked or overbaked, use an oven thermometer to check the oven for accuracy.

Equivalents

If you want to increase or decrease the size of a recipe (or if your measuring utensils are not the same as those given in the recipe), you will need to know the proper equivalents. Here are a few of the most common ones:

- 3 teaspoons = 1 tablespoon
- 2 cups = 1 pint
- 16 tablespoons (dry) = 1 cup
- 4 cups = 1 quart
- 16 ounces = 1 pound

Basic Kitchen Equipment



Cookie cutters To cut cookies or biscuits from rolled dough.

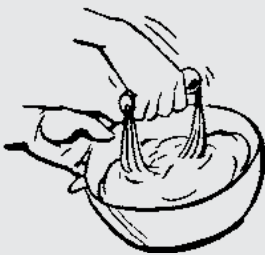
Kitchen fork To lift or turn small food.

Grater To grate food into tiny pieces.

Dry measuring cups To measure dry and solid ingredients. They usually come in a set of four nesting cups: 1/4 cup, 1/3 cup, 1/2 cup and 1 cup.



Liquid measuring cup . Comes in clear plastic or glass. Has a 1/4-inch headspace so it can carry liquids without spilling. Has pouring spout. Some have English measures on one side and metric measures on the other.

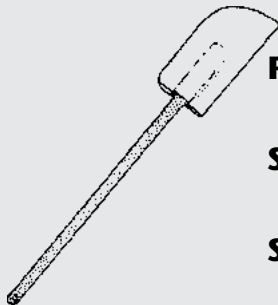


Mixing bowls Made of pottery, glass, metal or plastic. Come in different sizes.

Pastry blender To cut flour and shortening when making pastry and biscuits.

Potholders To protect hands when working with hot pans. Made of quilted cotton cloth.

Rolling pin and cover .. To roll dough for pie crusts, biscuits or cookies. The cover keeps dough from sticking to rolling pin.



Rubber spatula To remove food from spoons, sides of bowls and pans.

Sifter To incorporate air into flour and other dry ingredients. To mix dry ingredients.

Spatula To level dry or solid ingredients when measuring. To loosen baked goods from pans.

Turner To lift foods such as biscuits and cookies from baking sheet. To lift and turn foods such as pancakes.



Wire cooling rack To hold hot food such as cakes, breads and cookies for cooling.

Wire whisk To beat and blend, especially egg-white mixtures.

Baking sheets Flat, shiny baking pans on which to bake biscuits and cookies.



Baking Terms

Bake To cook in an oven.

Batter An uncooked mixture of flour, liquid and other ingredients, as for a cake or pancakes.

Beat To mix ingredients rapidly with a mixer, spoon or fork.

Blend To mix two or more ingredients thoroughly, usually with a spoon.

Brown To cook until brown in color.

Cool To let hot food stand until it feels cool.

Cream To combine ingredients with a spoon or mixer until soft, smooth and creamy.

Flour To sprinkle a greased baking pan with a little flour, then shake until the flour lightly covers the pan. Pour off any extra flour.

Fold To mix gently by lifting from bottom to top, then folding over.

Grease To coat a baking pan with a small amount of butter or shortening. Use clean fingers or a crumpled piece of waxed paper.

Measure To put the amount called for in a recipe into a measuring cup or spoon.

Melt To heat a solid food, such as butter or chocolate, until it turns liquid.

Mix To stir ingredients together, usually with a spoon.

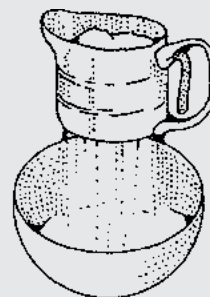
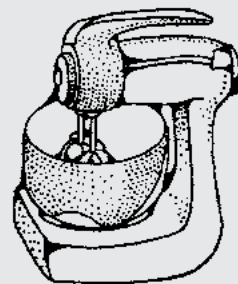
Mixture A combination of ingredients.

Preheat To heat the oven to the temperature called for in the recipe before putting the food in to roast or bake.

Sift To put dry ingredients, such as flour, through a sifter or strainer.

Soften To leave butter or cream cheese at room temperature for 15 to 30 minutes so that it becomes soft and easy to use.

Stir To mix ingredients gently with a spoon in a circular motion.



Abbreviations

Abbreviations are not used in this booklet, but other recipes often use them, so it is a good idea to know what they are. The following are some of the most commonly used abbreviations.

Tbsp. or T. = Tablespoon	tsp. or t. = teaspoon
c. = cup	lb. = pound
oz. = ounce	pt. = pint
qt. = quart	

Let's Bake Biscuits!



Good biscuits are very light. When baked, they are about twice the volume as unbaked. They should rise evenly into almost perfect cylinders, with vertical sides and level tops. The tops should be fairly smooth and covered with a tender, brown crust. The inside of the biscuit is creamy white, free from all yellow spots, light and fluffy. A good biscuit should be flaky, which you can demonstrate by peeling off layers in thin sheets.

Baking Powder Biscuits

Ingredients

2 cups sifted all-purpose flour
½ teaspoon salt
2 teaspoons baking powder
⅓ cup shortening
¾ cup milk

Equipment

Measuring cup, dry	Measuring cup, liquid
Waxed paper	Measuring spoons
Knife	Baking sheet
Mixing bowl	Pastry blender
Flour sifter	Spatula
Rolling pin	Canvas pastry set or bread board
Biscuit cutter	Potholders

Procedure

Bread is the world's most widely eaten food. It is an important food because it provides carbohydrates that give us energy. Bread also has protein to build muscle, and vitamins and minerals in bread help us stay healthy.

1. Assemble all the equipment and ingredients. Lightly flour bread board or pastry canvas and rolling pin.
 2. Preheat oven to 450 F.
 3. Sift flour onto waxed paper. Measure the flour by spooning lightly into the measuring cup, then leveling with the back of a knife. Measure salt and baking powder; add to flour. Sift again to distribute thoroughly through flour.
 4. Measure shortening.
 5. Cut shortening into flour mixture using either two knives or a pastry blender. Cut together until mixture resembles coarse cornmeal. Make a well in the center of the dry ingredients.
 6. Measure the milk.
 7. Pour milk into the center of the dry mixture. Stir through liquid and dry mixture using a fork (20 to 25 strokes). Do not overmix. Dough will be smoothed out during the kneading process.
 8. Turn out the dough on a lightly floured bread board or pastry canvas. Knead gently 15 to 20 strokes. This will help smooth the dough while it develops a delicate gluten structure.
 9. Roll lightly, working rolling pin from center of dough to the outer edges. Dough should be about ½ inch thick.
 10. Cut dough with floured biscuit cutter. Do not twist cutter — cut straight down and lift straight up.
 11. Using a spatula or wide-bladed knife, transfer biscuits to ungreased baking sheet. Place biscuits ½ inch apart. Place sheet on center rack in preheated oven.
 12. Bake at 450 F for 10 to 12 minutes, or until golden brown.
- Makes about 10 to 12 biscuits.*

Standards of Quality for Baking Powder Biscuits

Good baking powder biscuits have:

- Fairly symmetrical shape
- Evenly browned, tender crust
- Tender crumb and creamy color
- Good flavor — pleasing, well blended, no off flavor from leavening



Incorrect proportions or inaccurate measurement can cause biscuits to be:

- Misshapen
- Floury
- Undersized
- Tough
- Coarse

Improper handling can cause biscuits to be:

- Uneven in shape
- Undersized
- Compact
- Uneven in texture



Incorrect placement in oven can cause biscuits to be:

- Uneven
- Too crusty
- Burned on bottom
- Underdone in center
- Coarse textured
- Pale on top and sides
- Too brown at edges

Incorrect time and temperature can cause biscuits to be:

- Too brown and crusty
- Too pale
- Undersized
- Compact
- Coarse textured

How to Judge Baked Products: Biscuits

What qualities make a good biscuit? Here is a simple checklist so you can be your own judge. Don't forget that judges will sample your baked products, so taste is as important as appearance. You may make copies of this score sheet to use each time you bake biscuits.

Product:

Date:

Compare three biscuits

	Excellent	Good	Needs Improvement
Size			
Uniform			
Weight			
Very light			
Shape			
Uniform			
Symmetrical cylinders			
Vertical sides			
Level, smooth top			
Free from cracks, bulges, and peaks			
Color			
Inside			
Creamy white			
Outside			
Golden brown			
Evenly browned			
Texture (crumb)			
Uniform			
Tender			
Free from large holes and tunnels			
Moist and fluffy			
Flaky (peels off in thin sheets)			
Flavor			
Pleasing, well-blended, characteristic of ingredients			
No off flavor			
Comments			

Let's Bake Muffins



Making a good muffin is the first step in learning to make a good cake. A good muffin should be very light. The outside should be a golden brown, and the top should be rounded with no knobs or peaks. However, the crust should be pebbled rather than smooth. The inside should show round holes — not narrow, long holes pushing to the center, called tunnels. The most important thing to remember in making muffins is to barely dampen the dry ingredients. The difference between success and failure in muffins may be only a few extra strokes with a spoon. The batter should have lumps in it when you spoon it into the muffin tins.

Plain Muffins

Ingredients

2 cups sifted all-purpose flour
1 Tablespoon baking powder
1 teaspoon salt
¼ cup sugar
1 egg, beaten
1 cup milk
¼ cup vegetable oil

Equipment

Measuring cup, dry
Measuring cup, liquid
Measuring spoons
Large mixing bowl
Small mixing bowl
Wooden spoon for mixing
Egg beater or whisk
Flour sifter
Large metal spoon
Spatula or knife
Waxed paper
Muffin pan

Procedure

1. Assemble ingredients and equipment.
2. Preheat oven to 425 F.
3. Sift flour onto waxed paper. Measure carefully without packing, then sift again with baking powder, salt and sugar into large mixing bowl.
4. In small mixing bowl, beat together egg, milk and vegetable oil.
5. Add liquids to dry ingredients, *stirring only until flour is moistened*.
6. Fill greased muffin cups about two-thirds full. A metal spoon is better for this than a wooden spoon because it has a thinner edge and can cut through the batter more easily.
7. Bake at 425 F for about 20 minutes, or until light brown.
8. Remove the muffins from the tins and serve at once.

Makes about 12 medium (2-inch) muffins.

Muffin Variations

Cheese Muffins: Add ¾ cup shredded cheddar cheese to batter. Increase milk to 1¼ cups. Follow directions for muffins.

Pecan Muffins: Add ¼ cup brown sugar to the liquid. Add ½ cup chopped pecans to the batter. Follow directions for muffins.

Mystery Muffins: Fill prepared muffin cups half full. Drop 1 teaspoon of jam or jelly into the center of each muffin. Add more batter to fill muffin cups two-thirds full. After baking, carefully remove from pan as soon as you take them out of the oven so they won't get soggy.

Make another batch of muffins but this time “forget” to add the baking powder. What happened? Compare these muffins with the good ones you made.

Cornmeal Muffins



Ingredients

- 1½ cups sifted all-purpose flour
- 1 Tablespoon baking powder
- 2 Tablespoons sugar
- ½ teaspoon salt
- ¾ cup cornmeal
- 1 beaten egg
- 1 cup milk plus 1 Tablespoon
- 3 Tablespoons vegetable oil

Equipment

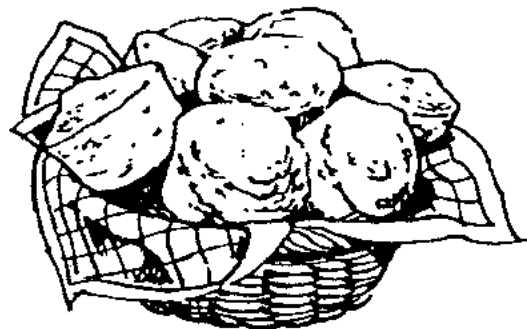
- | | |
|-------------------------|-------------------|
| Measuring cup, dry | Flour sifter |
| Measuring cup, liquid | Large metal spoon |
| Measuring spoons | Spatula or knife |
| Large mixing bowl | Waxed paper |
| Small mixing bowl | Muffin pan |
| Wooden spoon for mixing | Potholders |

Procedure

1. Assemble ingredients and equipment.
 2. Preheat oven to 425 F.
 3. Sift flour onto waxed paper. Measure carefully without packing, then sift again with baking powder, sugar, salt and cornmeal into large mixing bowl.
 4. In small mixing bowl, beat together egg, milk and vegetable oil.
 5. Add liquids to dry ingredients, *stirring only until flour is moistened*.
 6. Fill greased muffin cups about one-third full. A metal spoon is better for this than a wooden spoon because it has a thinner edge and can cut through the batter more easily.
 7. Bake at 425 F for about 20 minutes, or until light brown.
 8. Remove the muffins from the tins and serve at once.
- Makes about 12 medium (2-inch) muffins.*

Exhibit Tips for Muffins

- Don't bake your muffins on the day of judging. Muffins are best if they are baked the day before.
- Paper cups are not recommended for muffins. Seeing the crust is part of judging.
- To make more even muffins, use a small measuring cup and measure the batter.
- If you overgrease your pan, it causes darker sides. Wipe off the excess grease with a paper towel.
- Cool completely before wrapping and storing.
- If bread has been frozen, allow time for it to thaw.



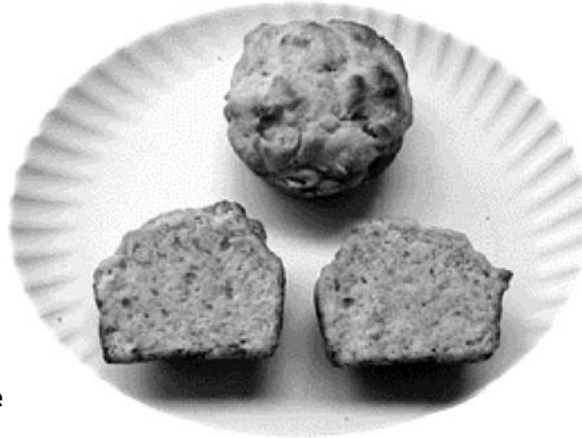
Standards of Quality for Muffins

Muffins come in many types. Each has special characteristics. Plain muffins, sweet muffins, cereal muffins, fruit muffins and nut muffins differ in appearance, texture and flavor.

When setting standards for muffins, take the type into consideration. For instance, a bran muffin will differ from a plain muffin, yet you can apply general standards for quality to all types.

Good muffins will have:

- Symmetrical shape
- Good color
- Even, tender grain
- Tender crust
- Good flavor
- Slightly rounded top



Incorrect proportions or inaccurate

measurements can cause muffins to be:

- Peaked
- Tough
- Coarse
- Tunneled
- Soggy
- Crumbly

Improper mixing can cause muffins to be:

- Undersized
- Tunneled
- Uneven
- Heavy, tough

Wrong size pans can cause muffins to be:

- Pale on top
- Cracked
- Coarse textured
- Peaked
- Too dark on bottom
- Tough



Incorrect time and temperature can cause muffins to be:

- Too light in color
- Compact
- Dry
- Too dark in color
- Doughy

How to Judge Baked Products: Muffins

What qualities make a good muffin? Here is a simple checklist so you can be your own judge. Don't forget that judges will sample your baked products, so taste is as important as appearance. You may make copies of this score sheet to use each time you bake muffins.

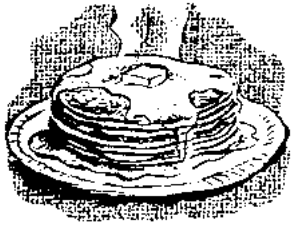
Product:

Date:

Compare three muffins

	Excellent	Good	Needs Improvement
Outside characteristics			
Color: Golden-brown crust with a somewhat pebbled surface			
Shape: Well-rounded top, no knobs or peaks			
Size			
Uniform size across samples			
Tender crust			
Inside characteristics			
Moist, tender crumb; neither soggy nor too dry			
Fine, round, even cells or holes; no tunnels			
Flavor			
Well-blended, characteristic of ingredients			
No off flavor from fat, leavening, flour, nuts			
Weight			
Very light			
Comments			

Let's Make Pancakes!



Pancakes are simple to make because they contain so few ingredients. They are delicious when served for breakfast with butter and syrup, honey, jam or fresh fruit.

Pancakes

Ingredients

1¼ cups all-purpose flour
½ teaspoon salt
1½ teaspoons baking powder
1 Tablespoon sugar
1¼ cups milk
1 beaten egg
2 Tablespoons vegetable oil

Equipment

Egg beater or whisk
Mixing bowl
Measuring cups, dry
Flour sifter
Measuring spoons
Griddle
Measuring cup, liquid
Pancake turner or spatula

Procedure

1. Measure the ingredients and the equipment.

2. Heat griddle.
3. In mixing bowl, combine flour, salt, baking powder and sugar.
4. Add the beaten egg and vegetable oil to milk and beat until smooth. Add to dry ingredients.
5. To find out if the griddle is hot enough, sprinkle a few drops of cold water onto the surface. They should dance lively.
6. Drop batter from spoon onto hot griddle and cook until the top is bubbly and the underside is nicely browned. Turn pancake only once.
7. Serve on hot plates with melted butter, syrup or fruit.

Makes 16 4-inch pancakes.

Peanut Butter Pancakes

Ingredients

1¼ cups all-purpose flour
½ teaspoon salt
2½ teaspoons baking powder
2 Tablespoons sugar
1¼ cups milk
1 egg
¼ cup peanut butter
Cooking spray

Equipment

Egg beater or whisk
Mixing bowl
Measuring cups, dry
Flour sifter
Measuring spoons
Griddle
Measuring cup, liquid
Pancake turner or spatula

Procedure

1. Assemble the ingredients and the equipment.
2. Heat griddle.
3. In mixing bowl, combine flour, salt, baking powder and sugar.
4. Beat milk with egg and peanut butter until smooth. Add to dry ingredients and beat just until well moistened.
5. Lightly spray hot griddle.
6. Spoon by ¼ cupfuls onto hot griddle. Cook until golden brown on both sides.
7. Serve with strawberry jam or syrup.

Serves five.

Standards of Quality for Pancakes

Good pancakes have:

- Symmetrical shape
- Tender crust
- Even browning
- Good flavor
- Tender, slightly moist crumb

Incorrect proportions or inaccurate measurements can cause pancakes to be:

- Too brown
- Unevenly browned
- Tough
- Poor in flavor
- Too pale
- Soggy
- Heavy

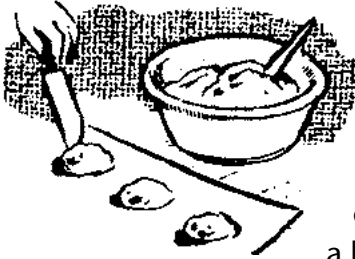
Improper mixing can cause pancakes to be:

- Heavy
- Tough

Incorrect cooking technique can cause pancakes to be:

- Pale
- Unevenly browned
- Too dark
- Not thoroughly cooked
- Tough
- Irregular in shape

Let's Bake Cookies



Why not plan to keep your family's cookie jar full of your favorite cookies? Making delicious cookies is easy. They can be used with fruit or puddings as a dessert for any meal. They also are good for lunches and snacks. Two of the many kinds of cookies are drop cookies and rolled cookies. Drop cookies are dropped from a teaspoon onto a baking sheet. Rolled cookies are rolled out like biscuits and cut with a cookie cutter.

Sugar Cookies

Ingredients _____

2½ cups all-purpose flour
2 teaspoons baking powder
½ teaspoon salt
½ cup shortening
1 cup granulated sugar
2 eggs, well beaten
1 Tablespoon milk
1 Tablespoon vanilla

Equipment _____

Measuring cups, dry	Small bowl
Flour sifter	Bread board
Straight-edged knife or spatula	Rolling pin
Measuring spoons	Cookie cutter, round
Waxed paper	Baking sheet
Large mixing bowl	Metal spatula
Electric mixer or mixing spoon	Cooling rack
Wire whisk or fork	Potholder

Procedure

1. Assemble ingredients and equipment.
2. Preheat oven to 400 F.
3. Sift and measure flour. Place measured flour in sifter and add baking powder and salt, sifting together onto a square of waxed paper; set aside.
4. In a large mixing bowl, cream shortening; gradually add sugar, blending well.
5. Add eggs to creamed mixture; mix thoroughly.
6. Add vanilla and milk to creamed mixture; mix thoroughly.
7. Gradually add dry ingredients, mixing well until dough is stiff.
8. Wrap dough in waxed paper and chill in the refrigerator for at least 30 minutes to make rolling easier.
9. Divide dough into thirds. Roll out each third of dough on lightly floured board. Roll to ¼ inch thick. Cut with lightly floured, round cookie cutter.
10. Place cookies on lightly greased baking sheet. Sprinkle lightly with sugar and bake 12 minutes or until lightly browned.
11. Remove cookies from baking sheet with spatula. Cool on wire rack. Store in a tightly covered container.
12. Gather remaining trimmings. Finish rolling and cutting dough as in steps 9 and 10.

Makes about 40 cookies.

Chocolate Chip Cookies



Ingredients

$\frac{2}{3}$ cup shortening
 $\frac{1}{2}$ cup sugar
 $\frac{1}{2}$ cup brown sugar
1 egg
1 teaspoon vanilla
 $1\frac{1}{2}$ cups flour*
 $\frac{1}{2}$ teaspoon baking soda
 $\frac{1}{2}$ teaspoon salt
 $\frac{1}{2}$ cup chopped nuts (optional)
1 6-ounce package semisweet chocolate chips

Equipment

Measuring cups, dry
Measuring spoons
Large mixing bowl
Electric mixer or mixing spoon
Wax paper
Flour sifter
Straight-edged knife or spatula
2 teaspoons
Baking sheet
Metal spatula
Cooling rack
Potholders

* At altitudes above 3,500 feet, try adding 2 to 3 tablespoons of flour for a firmer dough.

Procedure

1. Assemble ingredients and equipment.
2. Preheat oven to 375 F.
3. Cream shortening, sugars, egg and vanilla in a large bowl.
4. Sift and measure flour. Place measured flour in sifter and add baking soda and salt, sifting together onto a square of waxed paper.
5. Add dry ingredients to creamed mixture, mixing thoroughly.
6. Stir in nuts and semisweet chocolate chips.
7. Use two teaspoons to drop dough by teaspoonfuls onto ungreased baking sheet.
8. Bake for eight to 10 minutes or until lightly browned.
9. Cool slightly on baking sheet before removing with spatula onto cooling racks.

Makes three to four dozen cookies.

Baking Tips for Cookies

- Space unbaked batter carefully to avoid unattractive run-togethers.
- Use shiny baking sheets for evenly browned cookies.
- Cool baking sheets between baking times to prevent cookie batter from spreading before baking.
- Cool pans of bar cookies on a wire cooling rack.
- Cool cookies on parchment, waxed paper, paper toweling or cooling rack.



Chocolate Drop Cookies

Ingredients _____

1¼ cups sifted all-purpose flour
¼ teaspoon baking soda
¼ teaspoon salt
½ cup shortening
1 cup brown sugar, packed
1 egg
2 squares (1 ounce each)
unsweetened baking
chocolate
1 teaspoon vanilla
½ cup buttermilk
1 cup chopped nuts (optional)

Equipment _____

Measuring cups, dry
Measuring spoons
Flour sifter
Waxed paper
Straight-edged knife or spatula
Large mixing bowl
Electric mixer or mixing spoon
Custard cup or small bowl
Glass measuring cup
2 teaspoons
Baking sheets
Metal spatula
Cooling rack
Potholders

Procedure

1. Assemble ingredients and equipment.
2. Preheat oven to 350 F.
3. Sift and measure the flour. Place measured flour in sifter and add baking soda and salt; sift together onto a square of waxed paper. Set aside.
4. Cream shortening in large mixing bowl. Add sugar gradually and mix until fluffy.
5. Add egg to creamed mixture and mix well.
6. Place chocolate squares in a small custard cup or bowl and microwave on low just until melted, or place cup in a saucepan containing 1 inch of hot water and heat on low. Cool slightly before adding to creamed mixture. Mix well.
7. Combine vanilla and buttermilk in glass measuring cup. Add to creamed mixture; mixing well.
8. Add dry ingredients and mix well. Stir in the chopped nuts, if desired.
10. Use two teaspoons to drop dough by teaspoonfuls onto an ungreased baking sheet.
11. Bake 15 to 17 minutes.
12. Remove from baking sheet with metal spatula and cool on cooling rack.

Makes about three dozen cookies.

Freezing Tips for Cookies

After the cookies have cooled:

- Place them in a container designed for freezing — one that is moisture- and vapor-resistant (does not let moisture or flavor escape).
- Place foil, wax or freezer paper between each layer of cookies.
- Label with name, number of cookies and the date.
- Place in freezer for no longer than six months. (Don't freeze meringue cookies.)

Thawing Tips for Cookies

- Crispy cookies should be thawed in wrapping for 15 to 20 minutes. They will be less crisp than cookies baked from frozen dough.
- Place soft cookies on a plate to thaw.



Oatmeal Cookies

Ingredients

1 cup shortening
1 cup brown sugar, packed
1 cup granulated sugar
2 eggs
1 teaspoon vanilla
1½ cups flour*
1 teaspoon baking soda
1 teaspoon salt
3 cups oats
½ cup chopped nuts (optional)
½ cup raisins (optional)

Equipment

Measuring cups, dry
Measuring spoons
Large mixing bowl
Straight-edged knife or spatula
Electric mixer or mixing spoon
Flour sifter
Waxed paper
2 teaspoons
Baking sheet
Metal spatula
Cooling rack
Potholders

* At altitudes above 3,500 feet, try adding 2 to 3 tablespoons of flour for a firmer dough.

Procedure

1. Assemble all ingredients and equipment.
2. Preheat oven to 350 F.
3. In a large bowl, cream shortening and sugars together until light and fluffy.
4. Add eggs and vanilla, mixing well.
5. Sift and measure flour. Place measured flour in sifter and add baking soda and salt, sifting together onto a square of waxed paper.
6. Add dry ingredients to creamed mixture and mix thoroughly.
7. Stir in oats, nuts and raisins.
8. Use two teaspoons to drop dough by teaspoonfuls onto ungreased baking sheet.
9. Bake 10 minutes or until lightly browned.
10. Remove from baking sheet with metal spatula and cool on cooling rack.

Makes four dozen cookies.

Tips for Cookie Exhibits

- Don't bake cookies on the morning of judging.
- To make more evenly shaped cookies, use a melon scoop for drop-shaped cookies.
- Freeze five cookies: three to exhibit, one to drop and one to eat.
- Exhibit cookies on a clean foam or paper plate before judging. Cover them with plastic wrap or place plate in a resealable plastic bag.

Peanut Butter Cookies

Ingredients

¾ cup peanut butter
½ cup shortening
1¼ cups light brown sugar
3 Tablespoons milk
1 Tablespoon vanilla
1 egg
1¾ cups all-purpose flour
¾ teaspoon salt
¾ teaspoon baking soda

Equipment

Large mixing bowl
Measuring cups, dry
Measuring spoons
Electric mixer or mixing spoon
Straight-edged knife or spatula
Waxed paper
Flour sifter
Fork
Baking sheet
Metal spatula
Cooling rack
Potholders

Procedure

1. Assemble the ingredients and the equipment.
2. Preheat oven to 375 F.
3. Cream peanut butter, shortening, brown sugar, milk and vanilla in a large mixing bowl.
4. Add egg to creamed mixture. Mix until well blended.
5. Sift and measure flour. Place measured flour in sifter and add salt and baking soda, sifting together onto a square of waxed paper.
6. Add dry ingredients to creamed mixture and mix until just blended.
7. Make small balls of dough and place them 2 inches apart on an ungreased baking sheet. Flatten slightly with a fork, making a crisscross pattern on top of each cookie.
8. Bake for seven to eight minutes or until set and just beginning to brown.
9. Cool two minutes on baking sheet. Remove from baking sheet with metal spatula and cool on cooling rack.

Makes about three dozen cookies.

Standards of Quality for Cookies

The two types of cookies in this project are rolled and dropped cookies. Rolled cookies are made from a rather stiff dough and rolled on a lightly floured board to the desired thickness, then cut into various shapes. Dropped cookies are made from a soft dough and are dropped from a spoon onto a cookie sheet. They may or may not be flattened. Prepared and baked with care, all types of cookies can easily meet high standards.



Good cookies have:

- Uniform shape (typical of kind)
- Uniform color
- Texture true to type (soft or crisp)
- Tender crumb (though a few varieties are crisp)
- Good flavor



Incorrect proportions or inaccurate measurements can cause cookies to be:

- Streaked with flour
- Tough
- Too rich
- Dry
- Crumbly
- Too soft

Poor baking techniques can cause cookies to be:

- Uneven
- Poorly browned
- Doughy
- Too pale
- Too hard
- Too soft
- Run together
- Too dry
- Too brown

Poor mixing techniques can cause cookies to be:

- Streaked with flour
- Hard
- Dry
- Crumbly

How to Judge Baked Products: Cookies

What qualities make a good cookie? Here is a simple checklist so you can be your own judge.

Don't forget that judges will sample your baked products, so taste is as important as appearance.

You may make copies of this score sheet to use each time you bake cookies.

Product:

Date:

Compare three cookies

	Excellent	Good	Needs Improvement
Outside characteristics			
Color: typical of its kind symmetrical shape and size			
Uniform shape and size across samples			
Inside characteristics			
Moist, neither soggy nor too dry			
Crisp, chewy, or soft according to kind			
Tender			
Even cells or holes			
Flavor			
Well-blended, characteristic of ingredients			
Not too much spice, flavoring, etc.			
No off flavor from fat, oil, leavening, nuts, etc.			
Comments			



The Cook's Match-up

Play this game to help you learn the meaning of words used in recipes. The column on the left is a list of words used in cooking. The column on the right has their meanings. Match the word and its meaning by placing the correct number in the space in front of each meaning. The first one has been done for you.

- | | |
|-----------------|---|
| 1. Bake | _____ a. To cook until the food is evenly browned in color. |
| 2. Beat | _____ b. Gently mix ingredients together. |
| 3. Brown | _____ c. To heat a solid food until it turns to liquid. |
| 4. Chop | _____ d. Combine ingredients with spoon or mixer until mixture is smooth, soft and creamy. |
| 5. Cookie sheet | _____ e. Work dough with hands by repeating a folding motion, pressing forward and turning. |
| 6. Cream | <u> 1 </u> f. Cook in the oven. |
| 7. Grease | _____ g. Cut food into small pieces using a sharp knife on a cutting board. |
| 8. Knead | _____ h. Mix ingredients rapidly with a mixer, spoon, beater or fork. |
| 9. Melt | _____ i. Rub the sides and bottom of a pan with shortening. |
| 10. Stir | _____ j. A flat baking pan with no or very low sides. |

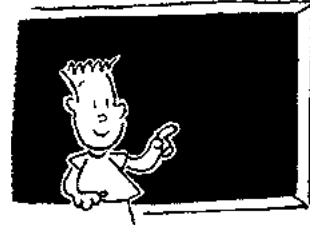


Answers on page 30.

Other Activities

Demonstrations

Give a demonstration to teach others how to bake. You may show how to make one of the foods in this book or demonstrate a technique such as how to measure accurately. For tips on how to plan your demonstration, look at the 4-H Cooperative Curriculum's Communications – Express Yourself “Putting It Together.”



Citizenship

Gifts of delicious homemade food products are welcome gifts. When you wrap a gift of food, think of these things:

- Plan a wrapping to keep the food fresh and clean.
- Show the beauty of the food.
- Wrap the food so it is easy to open.
- Include a simple note.
- Call ahead of time to arrange a convenient time to deliver your gift. Don't stay long. Ask a member of your family to go with you.

Leadership

- Help your baking leader prepare for the project meeting.
- Lead the other members in cleaning the kitchen.
- Help call members about meetings and activities.
- Help start a food drive that your club, school or church sponsors.

Career Exploration

Tour a bakery or restaurant. Learn how it bakes large amounts of food. Learn what bakers do on the job. Ask about other jobs related to the business.



Recordkeeping

Keep a record of all your 4-H activities. Use the record form in this project.

Answers to The Cook's Match-up:

a. 3, b. 10, c. 9, d. 6, e. 8, f. 1, g. 4, h. 2, i. 7, j. 5



Beginning Baking 1 Record Form

Name _____ Age _____ Number of years in 4-H _____

Years in baking projects _____

Project meetings held _____ Number attended _____

Products prepared	Date	Comments (Excellent, Good, Fair)
-------------------	------	----------------------------------

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Add pages if needed.)

What new skills did you learn? Which skills were improved?

Activities

Tours taken related to this project: _____

Judging experience(s): _____

Demonstration: _____



Citizenship: _____

Leadership: _____

Exhibits

Product	Where exhibited	Placing
---------	-----------------	---------

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Leader, helper, or parents' comments: _____

Member signature

Parent signature

Project leader signature

(Add pages as needed.)

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