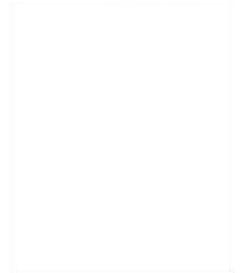


Name _____

Club _____



Mmmmmmm Cookies!



Member Project Guide

Project Background

This project is intended for 4H members of all ages, with and without prior cooking and baking experience. It is intended to be a single year project. This project is eligible for competition at the county level, however there is no State Fair category for this project.

Within this project members will be introduced to seven different cookie recipes. Many of these recipes have been collected from Wood County 4H Bake Off participants. Members will also be asked to complete four learning activities, which will add to their understanding of baking techniques and the ways in which ingredients interact with each other.

The principles learned in this project will serve as a base for more sophisticated baking experiences.

A note to the Project Helper

A 4H member has asked you to serve as a Project Helper, congratulations! You may be a parent, relative, project leader, friend, club advisor, or another individual that is important in the 4H member's life. Your duties begin with helping the youth create and carry out project guidelines, as outlined in this project guide. This is followed by helping the youth focus on each activity, providing support and feedback, and determining what was done well, what could have been done differently, and where to go next.

As a Project Helper, it is up to you to encourage, guide, and assist the 4H member. How you choose to be involved helps to shape the 4H member's life skills and knowledge of the importance of Baking.

Your Role as a Project Helper

Your contributions are critical to the delivery of the 4H program. It is essential that your interactions support positive youth development within the framework of these eight key elements:

1. Positive relationship with a caring adult
2. Safe environment, emotional and physical
3. Opportunity for mastery
4. Opportunity for value and practice service
5. Opportunity for self-determination
6. Welcoming environment
7. To be an active participant in the future

8. Engagement in learning

For more information on the eight key elements, please refer to the Advisor Handbook available online at www.ohio4h.org. In addition, on a practical level, your role as a project helper means you will;

- Guide the youth and provide support in setting goals and completing this project.
- Encourage the youth to apply knowledge from this project book.
- Serve as a resource person.
- Encourage the youth to go beyond the scope of this 4H project book to learn more about baking.

What you should know about experiential learning

The information and activities in this book are arranged in a unique, experimental fashion. In this way, youth are introduced to a particular practice, idea, or piece of information through an opening experience. The results of the activity are then recorded in the accompanying pages. Youth then take the opportunity to share what they did with their project helper, process the experience through a series of questions that allow the learner to generalize and apply the new knowledge and skill.

Project Guidelines

Step 1: Complete **all 10** activities

Step 2: Take part in **at least two** learning experiences

Step 3. Become involved in **at least two** leadership/citizenship activities

Step 4: Complete the project review

Step 1: Project activities

Please complete all of the following for judging:

_____ Terms and techniques

_____ Intro to ingredients

_____ Bake Chocolate Chip Cookies according to included recipe

_____ The chocolate chip cookie experiment

_____ Bake Oatmeal Cookies **OR** Monster Cookies according to included recipes

_____ Personalizing your cookies activity

_____ Bake Diabetic Friendly Peanut Butter Cookies **OR** Gluten Free Peanut Butter Kisses according to included recipes

_____ Blind taste test activity

_____ Tips for baking healthier cookies

_____ Include your own cookie recipe

Step 2: Learning experiences

Learning experiences are meant to complement project activities, providing the opportunity for you to do more in subject areas that interest you. Take part in at least two learning experiences, and write them down below. Some ideas include; Attending a workshop or class related to baking cookies, Organizing a club meeting about your project, Touring a local bakery, Preparing a demonstration or exhibit about your project, and participating in county project judging.

Plan to do	What I did	Date Completed	Project Helper Initials

Step 3: Leadership and citizenship activities

Choose at least two leadership/citizenship activities from the list below (or create your own) and write them in the table. Record your progress by asking your project helper to initial next to the date that each activity is completed. Here are some leadership/citizenship activities that you may choose from:

Plan to do	What I did	Date Completed	Project Helper Initials
	Help someone shop for groceries.		
	Take cookies to a friend, neighbor, or relative.		
	Help someone clean up the kitchen after a meal.		
	Serve a snack at a 4H Club meeting.		
	Help another member with their project.		
	Arrange to have someone speak to your club about food and nutrition.		

Baking Terms and Techniques

5 Tips for Cookie Baking Success

1. Gather all of your ingredients and equipment before starting. Make sure that you have the right tools for measuring and baking.
2. Keep unused dough covered and refrigerated when you are not working with it.
3. Place unbaked cookies roughly two inches apart on the cookie sheet. Do not grease the cookie sheet unless the recipe states to do so.
4. Bake only one cookie sheet at a time, on the center rack of the oven. Before pre-heating the oven, make sure oven racks are in the right place for the pans that you will be using.
5. Check cookie at the minimum time stated on the recipe, lightly brown edges tell you that the cookies are done. Let pans cool on wire racks. If cookies are left on pans to cool, they will continue to bake as long as the pans are still hot.

Mixing Terms

Beating: Beating can be done by hand or with a mixer. Beating introduces air into the mixture and distributes the ingredients evenly. Beating makes the mixture light and fluffy.

Creaming: Beating by hand, or with a mixer, until the shortening (or butter) and sugar are smooth and creamy.

Stirring: Stirring combines all ingredients lightly. Stirring is done by hand, in a circular motion. Stirring is generally used to incorporate chunky ingredients such as chocolate chips.

Sifting: Sifting means to put dry ingredients, such as flour, spices, and leavening agents through a screen. This ensures that they are combined well.

Measuring Techniques

Measuring liquids: Use a clear measuring cup with a lip for pouring. Place the measuring cup on a level surface and fill to the line that marks the amount called for in the recipe. Look at the liquid level from the side of the measuring cup, not the top, to make sure that you have an accurate measurement.

Measuring dry ingredients: Spoon the ingredient onto the measuring cup, fill to over-flowing, but do not pack down. Level off with the straight edge of a knife or spatula. (Use for flour, sugar, baking powder, etc.)

Measuring solids: Pack the ingredient tightly into the measuring cup, pressing with a spatula to remove air bubbles. Level off with the straight edge of a knife or spatula. (Use for peanut butter, shortening, etc.)

Measuring Brown Sugar: Fill the dry measuring cup with brown sugar and pack it down with the back of a spoon. Continue adding more sugar, and packing it down, until the measuring cup is full, level off the top. The brown sugar should retain its shape when it is turned out of the measuring cup.

Measuring butter or margarine in stick form: Follow the measurements printed on the wrapper. Cut the correct amount from the stick with a knife. Remember, 1 stick is 8 tablespoons, which is $\frac{1}{2}$ cup.

Cookie Storage Tips

Soft cookies: Place in a container with a tight lid. Cover the top layer of cookies with a sheet of waxed paper, and lay a slice of bread on the waxed paper. The cookies will absorb any moisture in the bread, and stay moist longer. When the bread becomes stale or hard, replace it with a new slice (cookies.com).

Crisp cookies: Place the cookies in a container with a loose lid. A container with a tight lid will keep moisture in, causing the cookies to get soggy, while a loose lid will allow air and moisture to move in and out of the container. During humid summer months you may want to store crisp cookies in a container with a tight lid, which will keep the moist air out.

To freeze cookies: You can freeze baked cookies in a rigid container or freezer bag for up to 12 months. You may want to place waxed paper between layers of cookies to prevent them from sticking to each other. Thaw completely before serving.

List three new facts that you learned from reading about baking terms and techniques:

1. _____
2. _____
3. _____

Are there any other baking tips that you already know, that you can apply to this project? _____

Intro to ingredients

There are a number of basic ingredients that go into nearly every kind of cookie. Though the amounts and varieties may vary depending on the recipe, each of these ingredients plays an important role in the finished cookie.

Flour: The flour binds all of the ingredients together. Flour is what gives your cookie structure, if you did not have any flour your cookie would be flat and soupy. On the other hand, if you add too much flour your cookies will be hard and dry. Flour also adds protein to your cookies. When baking cookies, white, unbleached wheat flour (often called all-purpose flour) is recommended.

There is a large variety of flour on the market, visit your local grocery store and list all of the different kinds of flour that you can find:

_____	_____
_____	_____
_____	_____
_____	_____

Each kind of flour is used for a different reason, and most recipes will specify which kind of flour you should use. If a recipe simply calls for flour, you can assume that all-purpose flour should be used.

Shortening: Shortening is also referred to as Crisco (the brand name most commonly associated with shortening). Shortening makes the cookie batter tender, and adds richness and moisture. When baking you want to make sure that you use butter-flavor shortening.

Butter: Butter has many of the same properties as shortening, and is used for the same reasons. The main difference is that butter tends to be stiffer, and makes cookies flakier. If a recipe calls for butter you should use unsalted butter. In most cases the recipe will also call for salt, using salted butter on top of the salt called for in the recipe makes the cookie taste salty. In most cases it is acceptable to substitute a stick of margarine for a stick of butter.

Egg: Eggs give cookies flavor and moistness, as well as nutritional value. Eggs also act like a glue, to bind all of the ingredients together.

Sugar: Sugar makes cookies sweet, but it also makes dough tender, and enhances browning and crispness. The two most common types of sugar used in baking are white granulated sugar and light brown sugar. You may also come across recipes that call for dark brown sugar (which has a stronger, deeper molasses flavor), confectioners or powdered sugar, and light corn syrup, which is a liquid sweetener.

Leavening Agent: Leavening agents used in cookies typically include; baking powder, baking soda, and cream of tartar. The leavening agent adds lightness and tenderness to the cookie; it causes the cookie to rise during baking.

Liquid: Every cookie needs a small amount of liquid to help bind the ingredients and correct the consistency of the dough. Most recipes call for water or milk, or occasionally a fruit juice.

Extracts and flavorings: The most common extract used in baking is vanilla extract. This helps to deepen the flavor of the cookie, and is often used to strengthen the other flavors in the cookie. You will notice that even if you are baking a chocolate cookie, in most cases the recipe will still call for vanilla extract. Pure vanilla extract can be expensive; so many people choose to bake with imitation vanilla extract. Imitation vanilla contains sugar or sweeteners, while pure vanilla does not.

Compare the prices of pure vanilla extract and imitation vanilla extract (make sure to compare similar sized bottles):

Pure Vanilla: _____

Imitation Vanilla: _____

Other common flavorings used in cookie baking include almond extract, cocoa powder, and peanut butter.

Add ins: Add ins are anything that is added to the cookie after all of the other ingredients have formed the dough. These include chocolate chips, candy pieces, nuts, and fruits such as raisins or blueberries. This is where many people choose to make substitutions, which is how you make a cookie your own. Add ins are not necessary in forming the dough of the cookie, so you can easily change them to suit your tastes and your needs. If you are baking for someone who has a nut allergy, do not include nuts, if your recipe calls for raisins, and you don't like raisins, substitute chocolate chips.

Grocery stores offer a huge variety of different flavored chips in the baking aisle, and they change with the seasons, but these are not the only things that you can use as cookie add ins. Make a list of different things that you could add in to your cookies. Be sure to add your favorite candies and fruits, you might surprise yourself with the combinations that you come up with!

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Chocolate Chip Cookies

Ingredients:

1½ cup Shortening
2 eggs
2 cups all purpose flour
1½ cups semi-sweet chocolate chips

1¼ cup light brown sugar
1 tablespoon vanilla extract
1 teaspoon baking soda

Directions:

Preheat your oven to 350° F. In a large bowl combine shortening, and brown sugar. Beat with a mixer on medium speed until ingredients are well blended. Add eggs and vanilla and mix well.

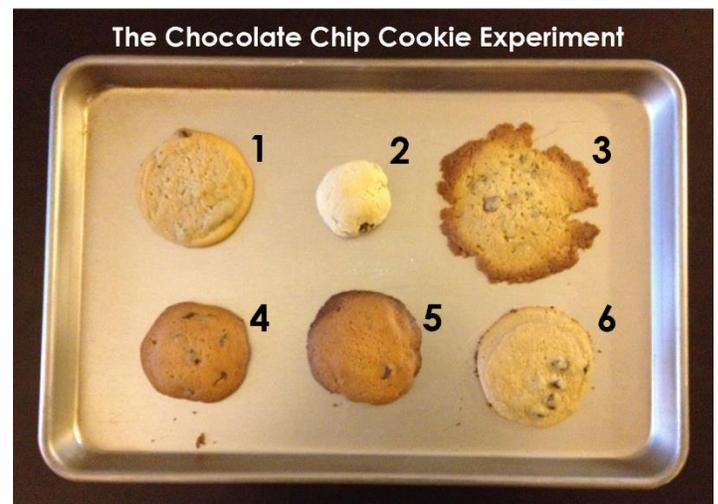
When all of the wet ingredients have been combined, add baking soda and flour. Beat until all ingredients have formed a uniform dough.

Use a spoon or cookie scoop to drop 1 inch balls of dough onto a cookie sheet. Bake for 10 to 12 minutes.

The chocolate chip cookie experiment

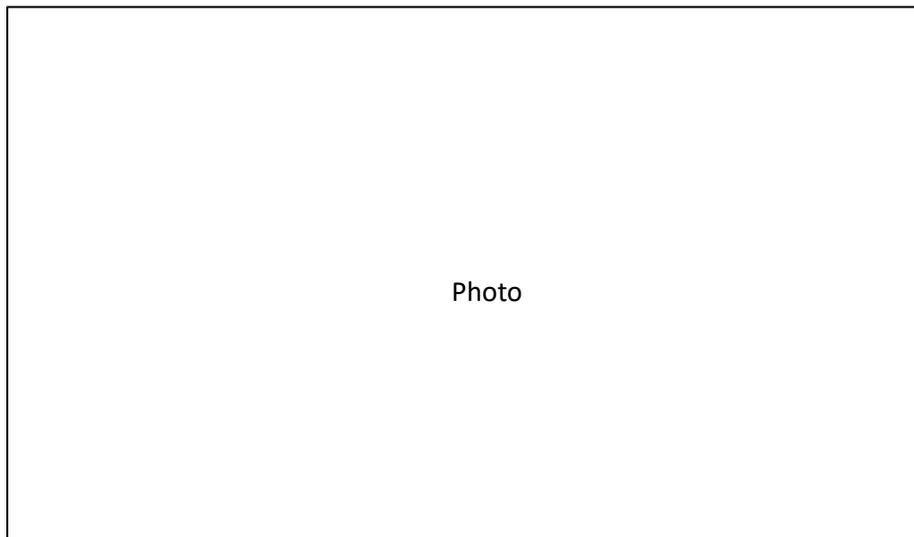
Before adding chocolate chips to your cookies, set aside six balls of dough to use for this experiment, follow the instructions to create six very different cookies using the variables noted for each cookie. Your finished experiment will look like the picture below.

1. Add chocolate chips to one ball of dough and bake according to the recipe. This will be your "correctly baked" cookie. When it is finished baking place it on a cutting board or an extra cookie sheet. Use a piece of tape or a sticker to mark this #1.
2. Use a fork to mix an extra tablespoon of flour into the second ball of dough. Add chocolate chips and bake according to the recipe. When it is finished baking place it next to the first cookie, use a piece of tape to mark it #2.



3. Use a fork to mix an extra tablespoon of shortening into the third ball of dough. Add chocolate chips and bake according to the recipe. When it is done baking place it next to the second cookie and mark it #3.
4. Add chocolate chips to the fourth ball of dough. Bake this cookie for 3 minutes longer than the others (13-15 minutes). When it is done baking place it on the board with the others and mark it #4.
5. Add chocolate chips to the fifth ball of dough. Bake this cookie at 325°F for 10-12 minutes. When it is done baking place it on the board with the others and mark it #5.
6. Add chocolate chips to the sixth ball of dough. Bake this cookie at 375°F for 10-12 minutes. When it is done baking place it on the board with the others and mark it #6.

Take a photo of your numbered cookies and place it in the box below. Fill in the table with your observations to finish the experiment.



#	What did the cookie look like?	What did the cookie taste like?
1		
2		
3		
4		
5		
6		

Monster Cookies

Ingredients:

3 eggs	1¼ light brown sugar
½ teaspoon salt	½ teaspoon vanilla extract
12 ounces peanut butter	1 cup sugar
1 stick of butter	½ cup M&Ms
½ cup chocolate chips	¼ Raisins
2 teaspoons baking soda	4½ cups quick oats

Directions:

Preheat your oven to 350° F. In a large bowl combine butter, eggs, brown sugar, and white sugar. Beat with a mixer until ingredients are well combined. Add peanut butter and mix well. When the peanut butter is creamed into the mixture, add in vanilla, salt, and baking soda.

Stir M&Ms, chocolate chips, raisins, and oats in by hand, making sure that all ingredients are evenly distributed. Using a cookie scoop or spoon drop 1 inch balls of dough onto a cookie sheet. Bake for 8-10 minutes.

Oatmeal Cookies

Ingredients:

½ cup shortening	1¼ cup light brown sugar
1 egg	⅓ cup milk
1½ teaspoons vanilla	3 cups quick oats
1 cup all purpose-flour	½ teaspoon baking soda
½ teaspoon salt	¼ teaspoon cinnamon
⅓ cup white chocolate chips	⅓ cup dried cranberries
⅓ cup chopped pecans	

Directions:

Preheat your oven to 375°F. Combine shortening, brown sugar, egg, milk, and vanilla in a large bowl, mix well. In a separate bowl combine oats, flour, baking soda, salt, and cinnamon. Mix in with wet ingredients.

Stir cranberries, pecans and white chocolate chips in by hand. Drop rounded tablespoonfuls of dough onto a cookie sheet. Bake for 10-12 minutes.

Personalizing your cookies

The best thing about baking your own cookies is that you can make them the way that you want them. This is easy when you know how to substitute one ingredient for another. For example, if your recipe calls for raisins, but you don't like raisins, you could use chocolate chips instead of raisins. There are three things to consider when making substitutions;

1. The ingredient and the substitution have to be similar in size and consistency. You could not use chocolate chips as a substitute for peanut butter, but you could use Chocolate Hazelnut Spread as a substitute for peanut butter because they are similar consistency.
2. Think about the flavor pairings that you want to make. For example, if you don't want to use raisins in the monster cookie recipe, you could substitute Reese's Pieces because they would go well with the peanut butter, chocolate chips, and M&Ms that the recipe calls for. However, you may not want to use blueberries as a substitute for raisins because the blueberries would probably not mix well with the peanut butter and chocolate flavors.
3. If you are going to make substitutions, make sure to use all of the basic ingredients that the recipe calls for – ingredients such as butter, flour, sugar, baking soda, and baking powder should not be left out or replaced because they form the base of your cookie. If you substitute peanut butter for regular butter, your cookie is not going to bake right because the butter is a necessary ingredient.

Think about the recipes for monster cookies and oatmeal cookies that are listed on the previous page. These cookies give you a number of opportunities to make substitutions. What could you substitute for the following ingredients? Remember to use the guidelines listed above.

Monster Cookies

Peanut Butter _____

Chocolate Chips _____

Raisins _____

M&Ms _____

Oatmeal Cookies

Cinnamon _____

White Chocolate Chips _____

Dried Cranberries _____

Chopped Pecans _____

Diabetic Friendly Peanut Butter Cookies

Ingredients:

1 cup Smart Balance Peanut Butter (naturally sweetened)
1 cup Splenda for baking
¼ cup Egg Beaters
1 teaspoon vanilla

Directions:

Preheat your oven to 350°F. Mix all ingredients together using a mixer. Roll the dough into 1 inch balls. Fill a small bowl with extra Splenda and roll each ball of dough in the Splenda before placing on a cookie sheet. Use a fork to press the balls down and create the traditional criss cross pattern. Bake for 8 to 10 minutes.

A note on baking for diabetics

It is a common misconception that people with diabetes cannot eat sugar. The truth is that people with diabetes can eat sugar, but they have to be careful about the amount of sugar that they consume. Diabetics have to regulate the amount of carbohydrates that they eat because carbohydrates affect their blood glucose levels, sugar is a carbohydrate.
(The American Diabetes Association)

This recipe uses a naturally sweetened peanut butter, which incorporates far less sugar than a typical peanut butter. It also uses Splenda for Baking. Splenda is a non-carbohydrate sugar substitute, Splenda for Baking is a mix of Splenda and regular sugar, which allows baked goods to brown and bake as they would with regular sugar, but has half of the calories and carbohydrates (splenda.com). Egg beaters are an egg substitute made from egg whites, while they have the same amount of carbohydrates that regular eggs have, they are lower in calories and fat.

You will notice that these cookies are small. Portion control is an important part of a healthy diet for everyone. If you can satisfy your sweet craving with one small cookie then you are already making healthier choices!

Gluten Free Peanut Butter Blossoms

Ingredients:

1 cup sugar
1 cup creamy peanut butter
1 package milk chocolate
Hershey Kisses
1 egg
1 teaspoon vanilla

Directions:

Preheat your oven to 350°F. Mix all ingredients together using a mixer, the dough will be very thick. Roll the dough into 2 inch balls, and roll each ball in sugar before placing onto a cookie sheet. Use your fingers to press the balls down slightly. Bake for 8 minutes. While the cookies are baking unwrap your Hershey kisses (each cookie will get one Kiss). Remove cookies from the oven and gently press a Kiss onto the middle of each cookie. Place the cookies back into the oven and bake for 1 to 2 more minutes.

What is gluten?

Gluten is a protein found in wheat, barley and rye (it is not found in oats, however oats often come into contact with these other grains during processing, so most people who eat gluten-free avoid oats as well). People with Celiac disease cannot digest this protein, and therefore require a gluten-free diet. (Ohio State University College of Family and Consumer Science)

It can be very difficult to follow a gluten free diet, think of all of the foods that you consume that are made from grains – breads, pastas, baked goods, and crackers, even breaded chicken nuggets contain gluten. Recently, many alternate products have become available for those who follow a gluten free diet.

This recipe is gluten-free because it contains no flour. It is possible to bake gluten-free cookies using flour substitutes, such as rice flour. If you are interested in exploring gluten free baking we suggest you consult a gluten-free cookbook for additional tips and ingredient suggestions.

Blind Taste Test

These peanut butter cookie recipes include ingredient substitutions that make them healthier for people on strict diets, but can your friends and family members tell the difference between these cookies and the others that you have baked for this project. Choose one of these peanut butter cookies, and another cookie that you have baked for this project (chocolate chip, monster, or oatmeal), and ask your friends and family members to taste both cookies and tell you which cookie they liked better. Use the table below to help you collect the data.

Special diet cookie: _____	regular cookie: _____

Which cookie was more popular? _____

Why do you think this was? _____

How did your friends and family react when they learned that one of the cookies was baked for someone with a special diet? _____

Baking healthier cookies

There are many different ways to make your favorite cookies healthier, simply by replacing one ingredient with another. Here are some healthy tips to try the next time you bake your favorite cookie recipe:

1. Instead of using vegetable oil in your cookies, use applesauce. It can be directly substituted using the same measurements. This will lower the number of calories in your cookies.
2. Use an egg substitute. Many brands are available at your grocery store, and they typically have a conversion chart on the container to tell you how much of the substitute you will need for your recipe.
3. Use milk with a lower fat content. When milk is needed for a cookie recipe, it is usually a very small amount, and is only needed to add moisture to the dough. If you use 1% or skim milk instead of whole milk, it will not change the taste of your cookies.

