JOIN THE FITNESS TEAM

4-H DAIRY FOODS PROJECT MANUAL

Name __________________________ Age ______
Address ____________________________________________
County __________________________ Years in Club Work ______
Name of Club __________________________ Grade in School ______
Leader's Signature __________________________

FLORIDA COOPERATIVE EXTENSION SERVICE
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
UNIVERSITY OF FLORIDA, GAINESVILLE
JOHN T. WOESTE, DEAN FOR EXTENSION
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Consumer Food Marketing Specialist

Adapted for Sarasota County 4-H
LET'S LEARN ABOUT DAIRY FOODS

Milk is a food used all over the world.

Do you know how milk gets from the farm to you? This project will help you learn about this. Milk is good for you. This project will tell you how milk helps you grow. Milk only helps you if it is in your body. You will also learn some ways to prepare milk.

Here is what you will need to do to and learn in this project book:

1. Make a poster showing animals which give milk.
2. Know some foods which are made from milk.
3. Learn to prepare some milk drinks or a food that has milk in it.
4. Learn to compare milk cost.
5. Learn how to care for milk.
6. Learn table manners for serving and eating.
7. Learn some rules for careful cleaning.
8. Do the "Curds and Whey" experiment.
9. Do "Milk Beverage" experiment.

Project 1

MILK AROUND THE WORLD

Milk from many different animals is used for food. In India and Africa, the people drink milk which comes from the water buffalo. Cows and sheep are used for milk in France, Greece, and America. Goats provide milk in Africa, Asia, France, and America. In the hot, sandy deserts of Africa and Asia, camels are used as a source of milk. Most of the milk used in the world is cow's milk.

A good dairy cow can produce about 6,000 quarts of milk in one year. That will provide 18 boys or girls with 4 glasses of milk each day for one year. In Florida, most of the milk comes from cows. Therefore, "milk" in this dairy foods project means cow's milk.
WHERE ARE COWS MILKED?

Most cows in Florida are milked in a building called a "milking parlor". They stand in a stall where the teats and udder are washed and dried. The milk flows from the cow into a milking machine and then into a pipeline. From there, it flows into a large stainless steel refrigerated tank.

WHERE IS THE MILK STORED?

On most dairy farms today milk is never touched by human hands. The cows are milked by machine into a pipeline. The milk is then pumped to a large refrigerated tank. The milk is stored at 40°F until it is picked up by a refrigerated truck. The truck transports it to the dairy plant.

WHAT HAPPENS TO MILK AFTER IT LEAVES THE FARM?

At the dairy plants, the milk is pasteurized (made free of all disease-producing organisms). Then it is bottled in glass, plastic, or paper cartons. The milk cartons are then delivered to your home or supermarkets.

Milk which is not prepared for fresh delivery is made into other dairy products. These include butter, ice cream, cottage cheese, yogurt, cheddar cheese, Swiss cheese, dried milk products, and many others.
MILK SCRAMBLE

Unscramble the letters in each group to spell a milk food. Can you name other milk foods or foods containing milk?

________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

Answers: Yogurt, Milkshake, Cheese, Butter, Milk, Ice Cream, Pudding
Project 2

MILK AS A FOOD

Milk helps our body to do these things:

1. Grow and repair itself.
2. Work properly.
3. Give us energy.

Do YOU drink milk? Yes____ No____

Cool, refreshing milk is a favorite mealtime drink for many people. It makes good food taste better.

Hot chocolate milk is another favorite at meals and between meals.

This is great, because everyone needs calcium — grandparents, teens, babies, even the cat! And milk is the most important source of calcium in our diet.

CALCIUM helps to make bones strong and teeth hard. It helps muscles work and blood to clot.

Milk also contains PROTEIN. All parts of our bodies (muscles, skin, organs, hair, and nails) contain protein. They must have a continual supply to build themselves. They must have a supply for repair such as after injury or illness.

You all know milk comes from an animal. That's why it's called an animal food. Milk and other animals foods - meat, cheese, eggs, fish - supply PROTEIN.

Milk contains VITAMIN A that helps keep skin smooth, hair shiny, nails strong, and vision clear.
HOW MUCH MILK SHOULD YOU HAVE EACH DAY?

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Recommended Glasses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children under 9</td>
<td>2 or 3 glasses</td>
</tr>
<tr>
<td>Children 9 - 12</td>
<td>3 or more glasses</td>
</tr>
<tr>
<td>Teenagers</td>
<td>4 or more glasses</td>
</tr>
<tr>
<td>Adults</td>
<td>2 or more glasses</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>3 or more glasses</td>
</tr>
<tr>
<td>Nursing mothers</td>
<td>3 or more glasses</td>
</tr>
</tbody>
</table>

Milk or milk foods are one of the best ways to get the calcium, protein, and some of the vitamins your body needs to be in top shape.

Milk will NOT supply all of your body needs. Eat different foods every day.

- Orange Juice
- Beans
- Carrots
- Peanut Butter
- Fish
- Eggs
- Rice
- Slice of Bread
- Peach
Milk is used in many foods.

- cream pie
- custard
- milkshake
- malted milk
- pudding
- gravy
- cream soup
- hot bread

CIRCLE the foods you eat.

Milk may be bought at the store in many forms. Look for these milk products at your store.

- whole milk
- cottage cheese
- dry milk
- chocolate milk
- buttermilk
- cheese
- ice cream
- skim milk
- evaporated milk

CIRCLE the ones your family uses.
1. Make several of the recipes using milk. Write about the milk recipes you used here:

<table>
<thead>
<tr>
<th>Name of Recipe</th>
<th>Amount of Milk Used in Recipe</th>
<th>Comments About Recipe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

2. Try other recipes using milk.

<table>
<thead>
<tr>
<th>Name of Recipe</th>
<th>Amount of Milk Used in Recipe</th>
<th>Comments About Recipe</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

3. The three C’s for caring for milk are C_____, C_____, and C_____ (Fill in the blanks).

Make a poster. Show the three C’s for taking care of milk.

Show the poster at a club meeting or at school. Tell the group members about the importance of the three C’s.

4. Price some kinds of milk at the grocery store.

<table>
<thead>
<tr>
<th></th>
<th>Size of Container</th>
<th>Cost</th>
<th>Cost/Quart*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2% Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skim Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporated Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Fat Dry Milk</td>
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</tbody>
</table>

*Example - Whole milk in a ½- gallon container (2 quarts) costs $1.80. The cost per quart is $1.80 divided by 2 = $.90 per quart.
Project 3

CARING FOR MILK PRODUCTS AT HOME

Keep milk:
* Clean . Covered . Cold
* Out of the sun - sunlight harms some vitamins.

Keep:
* Ice cream in your home freezer or the freezer part of your refrigerator.
* Canned milk on your cupboard shelves - opened cans in your refrigerator.
* Dry milk in a jar or can with a tight-fitting cover. Store it away from heat.
* Cheese - well wrapped - in your refrigerator. You can scrape off a little mold and still use cheese.

STRETCH YOUR MILK MONEY

* Price different kinds of milk. Skim, evaporated, and buttermilk usually cost less than fresh, whole milk.
* Price half or full gallons of milk. One gallon usually us cheaper than 4 separate quarts.
* Slice or grate cheese yourself. You pay to have this done for you.
* Save the most by using dry milk. A quart of mixed dry milk costs less than fresh, whole milk.
ACTIVITIES FOR YOU TO DO

Milk Recipe
For 1 quart of milk:
* Fill a quart jar nearly full of warm water
* Add 1 cup of dry milk
* Cover the jar tightly
* Shake jar until lumps are gone
* Cool milk before serving

*******
Mix dry milk and regular milk.
To make 1 quart:
* Fill quart jar half full of warm water
* Add ½ cup dry milk
* Put cover on jar and shake until lumps are gone
* Remove cover and fill jar with regular milk
* Cover jar and cool milk before drinking it

The Cost of Milk
* On a trip to the grocery store, look at the many kinds of milk in the dairy case. Write down the cost of the following:
  1 gallon whole milk ________
  ½ gallon whole milk ________
  1 quart whole milk ________
  1 quart skim milk ________

* There are four quarts of milk in a gallon. Divide the cost of a gallon by four:
  $_________ (Cost of one quart)
  4 $_________ (Cost of one gallon)
* Is this figure smaller or larger than the cost for one quart? ________

Which do you think would be the better way to buy milk, by the quart or by the gallon? If your family uses a large amount of milk, the gallon would be the better buy. It should be bought in the size container that would stay fresh the longest.

* Locate the aisle for the non-fat dried milk, condensed and evaporated milk. Write down the price of a 12-quart box of non-fat dried milk. Divide the cost by 12:

  $_________ (Cost of a 12-quart box)

* What did a quart of fluid skim milk cost? ________. How much more or less does a quart of non-fat dried milk cost? ________. Which is the better buy? ________

* Think about what you have eaten today and read the nutrition information in the front of the book. What would be better for you to have for a between-meal drink? A milk drink? ________. A fruit or vegetable drink? ________. Your favorite soda pop? ________. Why? ________
TABLE MANNERS

Manners mean being kind and considerate and saying "please" and "thank you!".

In many homes, a "blessing" is offered before the meal. When you are a visitor, wait to see what the person who invited you does before you start to eat. This person is called a host or hostess.

Here are a few tips to help you:

1. Let your mother, host or hostess start to eat before you do.

2. Sit up nice and straight at the table.

3. Always talk about pleasant things.

4. Don't talk with food in your mouth.

5. Ask for food to please be passed rather than reach in front of someone else and grab it for yourself.

6. If you are served something you don't like, just leave it on your plate. Don't comment on the food.
SERVING YOUR FAMILY AND FRIENDS

When we prepare food, we like to eat it, especially if it looks appetizing and is served nicely. After you've learned to make milk drinks and other foods using milk, you'll want to serve them to your family and friends.

There are two ways of serving refreshments: you can serve people individually when they are seated, or place the food on the table or buffet and let people select what they want to eat. This is called buffet style. It is a quick and easy way to serve. In serving buffet style, you will want to make the table look pretty. Use a bright tablecloth, then place flowers, a potted plant or a bowl of fruit in the center of the table.

Food should be placed on a pretty tray or plate. Arrange the snack or other foods on the plate.

The drink may be served in your best cups or glasses. Use a pitcher to fill the glasses. You'll need a napkin for each person.

IT'S CLEAN UP TIME

When you've finished cooking, then it's clean up time. Your mother will be glad to have you cook if you always clean up. Put everything back in place.

Soaking cooking utensils will make them easier to wash. Use hot water to soak pans used for sweets and cold water for other foods.

Dishwashing is easy if you have plenty of hot water and soap. There are three main steps.

STEP 1
Scrape and stack (wipe out greasy dishes and pans with paper before washing); stack according to size and type — put glassware together, silverware, plates, pots and pans.
Be careful with that sharp knife! Wash it separately from other dishes so it doesn't hide in the dishwasher and cut you.

STEP 2
Use hot soapy dishwater. If the water gets dirty, change it.

Use a clean dishcloth. Sponges are very hard to keep sanitary. Wash any glass items first, and rinse carefully because germs can be spread by poorly washed items, such as spoons and spatulas. Last, wash the pots and pans.

STEP 3
Put everything back in place, wipe up any spills on the counter and range. Clean the sink if necessary. Sweep the kitchen when you are finished.

ACTIVITIES FOR YOU TO DO

Share what you have learned with members of family, classmates at school or friends. Prepare a snack and serve it with a glass of milk. Surprise your parents on a day when they would enjoy it.
Experiment

CURDS AND WHEY

Little Miss Muffet sat on a tuffet eating her - cottage cheese?
That’s right, Curds is the cottage cheese and Whey is the liquid by-product you get when making curds.

Cottage cheese is quite simple to make. It is a good product for learning how to cook. The ingredients are ones you have on hand. The results are fast and spectacular. What’s more, you’ll have only a few pots and things to clean up. The cottage cheese tastes quite good. You might want to add a little salt for taste, or sour cream for smoothness. If there is any cheese left over, keep it in the refrigerator.

INGREDIENTS

2 cups whole milk, or milk that has been soured

1 Tablespoon vinegar

Cooking pot or saucepan
Mixing spoon
Strainer
Bowl

Pour two cups of milk in a pot. Cook at medium heat until bubbles begin to form on the top. Stir while heating. Remove the pot from the heat and stir in a tablespoon of vinegar. Keep stirring gently, and look for curds to form. It happens quickly so keep your eyes on the pot. The liquid left over is the whey.

Stir a few times while the mixture cools. Then pour off the whey through a strainer, keeping the curds. See the illustration. Gently squeeze the curds with the mixing spoon to be sure all the whey is removed. Now go ahead and taste it.
Experiment

MILK BEVERAGE RECIPES

Make some milk drinks flavored with fruit or fruit juices. Here are several drinks you will want to try. You may find other recipes in cookbooks. To blend ingredients you can use the rotary egg beater, electric mixer, or shake the drink in a jar with a tight-fitting lid.

COCOA (6 servings)

4 tbsp. cocoa
3 tbsp. sugar
1/8 tsp. salt
4 cups water
1 cup dry milk
½ tsp. vanilla


PEANUT BUTTER MILK (6 servings)

6 cups milk
2 tbsp. sugar
1/3 cup peanut butter

Add milk gradually to peanut butter and mix well. (Dry milk may be used. Use 5 ½ cups cold water and 2 cups dry milk.)

SPICED MILK (6 servings)

1 ½ cups dry milk
½ tsp. cinnamon
½ tsp. nutmeg
1 tbsp. sugar
1/4 tsp. salt
6 cups water

Add dry ingredients to water and beat, stir, or shake until smooth.

MILK SHAKE (1 serving)

1 cup milk
1 scoop ice cream

Flavor (select one):
½ banana, mashed
1/4 cup crushed sweetened strawberries
½ tbsp. maple syrup
2 tbsp. chocolate syrup

Shake or beat thoroughly.

Did it have scum on top? ___________
If so, why? ______________________
Did you beat it with a rotary beater? ________
Did you see any difference between beaten and unbeaten cocoa? ___________
How did it taste? ______________________
Was it served hot? ____________________
Demonstration Suggestions

1. Prepare a milk beverage.

2. Prepare nutritious snacks with dairy products.

3. Compare the cost of different types of milk.

4. How to make a beverage from non-fat dry milk.

Giving a 4-H project demonstration can be fun! A demonstration is your chance to show and tell what you have learned. You've probably already given a demonstration but didn't know it. When you learned how to do something in your 4-H project and then showed another club member, you gave a demonstration.

Here's how to make a demonstration fun.

1. Select a topic.

2. Outline the key points.

3. Prepare summary.

4. Equipment and supplies you will need.

5. Practice.

6. Give your demonstration.

Ready to try one? Here's an example.

will need. Topic: Making a milk beverage. Attention-getter: A beverage you have already made in the project. Suggested introduction: “Can you make a beverage that looks like this?” A recipe can help. It tells the kinds and amounts of ingredients needed. The ingredients listed in the recipe must be measured correctly. Different types of ingredients need to be measured differently. Incorrect methods of measuring can cause a recipe to be a failure.

List the key points you will cover, what you will do to demonstrate them, and the equipment and supplies you will need.

Here's an example.

Key point: Standard measuring cups are necessary to measure correctly. What you will do: Show measuring cups and spoons. Equipment and supplies you will need: Set a tray of equipment and supplies you will need. Arrange in order that you will be using them.

A summary is used to tie together the key points you have demonstrated. You could use a poster to help you do this. For example, you could say, “To become a good cook, you must learn to measure correctly”. Your poster might say this.

Remember to:
1. Use a liquid measuring cup for liquids.
2. Set the cup on the table and read the measurement at eye level.
3. List steps to be followed in recipe.

Posters can be a big help in presenting a demonstration. For example, you could also have one showing different ways to change flavor of recipe.

Following your presentation, ask the audience for questions. If you don't know the answer to a question, say that you don't know but will look it up.

You can close your demonstration by saying, “This ends my demonstration”.

16
HERE'S THE STORY ABOUT MY PROJECTS

Do the activities in this book. Then answer these questions.

What did you learn about how milk gets from the farm to you?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Name 5 foods made from milk.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Which milk recipes did you or your family like most of all? Why?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Describe results of "Curds and Whey" experiment:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
How much milk should you have each day?

List some of the health benefits from drinking milk.

Describe how to care for milk products at home.

Did you give a demonstration?  Yes  No

Name of demonstration

Where was the demonstration given?

Write a short story about what you learned from this project.
4-H CLUB MEETINGS AND ACTIVITIES REPORT

Check each time you attend a meeting or an activity of your 4-H Club.

Regular 4-H Club Meetings .......... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Special Meetings and Activities .... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

Check what you did at the meetings and activities.

Led the 4-H Club Pledge.............. ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Led the Pledge of Allegiance......... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Gave a demonstration................ ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Made a talk.......................... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Took part in a discussion............. ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Exhibited a dairy food................ ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Exhibited other projects.............. ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Took part in a project tour........... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Took part in a dairy food workshop.. ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Took part in judging contest......... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Voted on 4-H Club officers........... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Led a game.......................... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Led a song.......................... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Served as an officer................... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Gave a committee report.............. ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Made a motion........................ ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Seconded a motion.................... ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
Served as host or hostess............ ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

County 4-H meetings and activities that you attended.

<table>
<thead>
<tr>
<th>Month</th>
<th>Kind</th>
<th>If you took part, what did you do?</th>
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</tbody>
</table>

4-H Committees that you served on.

<table>
<thead>
<tr>
<th>Kind of Committee</th>
<th>The Job to be done</th>
<th>What part did you do?</th>
</tr>
</thead>
<tbody>
<tr>
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