Nutrition for 4-H Foods Projects: Dairy Foods Project

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- Welcome to the Dairy Foods Module of the nutrition training for 4H projects. We are
 glad that you are able to join us today. My name is Alison Berg and I am a UGA Extension
 Nutrition and Health Specialist. Carolina Cawthon, a graduate student at UGA is my coauthor of these trainings. Thank you, Carolina for your help! This presentation was
 brought to you by Georgia 4-H and UGA Extension Family and Consumer
 Sciences, Foods and Nutrition
- This module is all about the Dairy Foods project! We recommend viewing this module AFTER you have viewed the MyPlate Nutrition module and the Recipe and Menu module, because these modules will help you understand how dairy foods fit into the big picture.
- You will probably want to view this video more than once as you work on your project, and that's just fine. You may also want to print out the copies of the slides and view other related links on the 4-H foods projects website so that you can have this information available as you select your recipe and so you can brush up on your dairy knowledge. Let's get started.

What's Covered

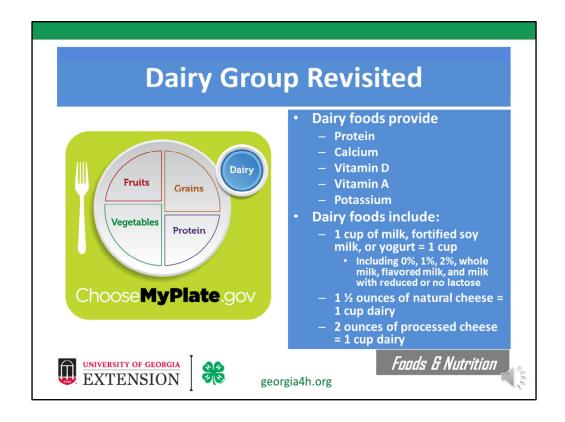
- The Dairy Group Revisited
 - Daily servings by age group
- Why do we need dairy foods?
- For seniors Meeting Dairy Foods Project Achievement requirements







- What's covered in the Dairy Food Project Module?
- In this module, we will focus on the dairy foods group and provide some of the more specialized information that you will need in order to complete your project, including how much diary foods are recommended per day by age and gender.
- Next, we will learn about how dairy foods help us stay healthy and why they are an important part of MyPlate
- Finally, for the seniors, we'll review how to figure out if the recipe you've chosen will meet the dairy requirements for the Senior Dairy Foods Project



- You will recall from the MyPlate Nutrition Module that dairy is represented by the blue circle at the upper right of the MyPlate place setting. Remember that Dairy foods provide protein, calcium, and Vitamin D. Because you are in the dairy project, you should also know that dairy foods are good sources of vitamin A and potassium as well!
- The dairy group includes foods like liquid milk—fat free, 1% fat, 2% fat, and whole milk are all included, but remember to choose most of your dairy foods from low-fat and fat-free options.
- Fortified soy milk is also included in the dairy group. "Fortified" means that a nutrient has been added to a food, in this case calcium and vitamin D. Adding calcium and vitamin D to soy milk helps it give us all of the nutrients we depend on the dairy group to provide.
- Yogurt is another member of the dairy group, and like fluid milk and soy milk, 1 cup of yogurt counts as 1 cup of dairy foods.
- Natural cheeses and processed cheeses are also part of the dairy group. Notice that for cheeses, we have ounce equivalents rather than a cup for cup amount. This makes sense, because unless the cheese is shredded, a slice of cheese is harder to measure in cups! It's much easier to weigh cheese in ounces.

Dairy Group Revisited

How to choose dairy foods

- Choose low-fat or fat free dairy foods most often
 - Helps limit total and saturated fat
 - Important for milk alternatives as well (soy, rice, almond, coconut)
- If you cannot or do not consume milk
 - Lactose-free products are another option
 - Choose other foods rich in calcium

Non-dairy calcium sources:

- Calcium fortified juices, cereals, breads
- Calcium fortified milk alternatives (soy, rice, almond, coconut)
- Canned fish with bones
- Soy products made with calcium sulfate added (tofu)
- Some leafy greens like collards, turnip greens, and kale





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How do we make the best choices of dairy foods?

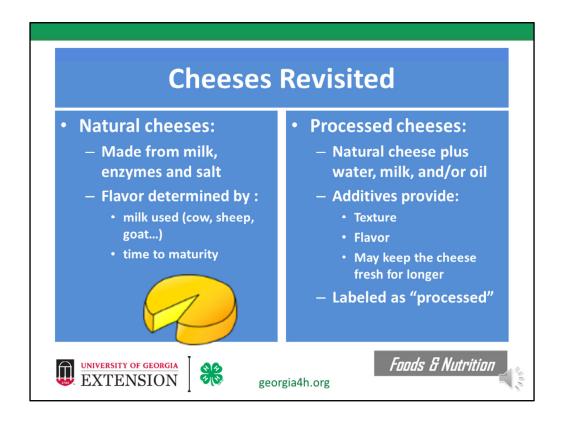
- Remember in the MyPlate module our discussion about limiting saturated fat? One important way to limit saturated fat every day is by choosing low-fat and fat-free dairy foods most of the time and saving full-fat dairy foods for sometimes. When choosing a cow's milk alternative, like soy, rice, almond, or coconut milk, it is still important to choose low fat and fat free versions. Did you know that coconut milk is naturally high in saturated fat?
- Some people choose not to or cannot consume dairy foods
 - For example, some people are not able to consume the natural sugar in milk, called lactose, because they cannot digest it. They have to avoid most dairy foods or choose lactose free products
 - If you do not consume dairy foods, it is important to eat other sources of calcium or choose lactose free products.

Non-dairy sources of calcium include

- calcium fortified juices, cereals, breads,
- Calcium fortified milk alternatives, like the soy, rice, almond, and coconut milk we discussed
- canned fish like sardines and salmon with bones
- soy products like tofu that are made with calcium sulfate
- some leafy greens like collard greens, turnip greens, and kale

^{*}It is important to note that these foods don't all provide the same amount of calcium as

milk. For example, it would take more than about 3 cups of these greens to provide the same amount of calcium in one cup of milk. So if you choose to consume non-dairy sources of calcium, it will take a little more planning to make sure you are getting enough calcium each day.



- Let's revisit natural and processed cheeses
- Recall that natural cheeses are made of milk, enzymes, and salt.
- The flavor is determined by the type of milk used—cow, sheep, and goat are all commonly used for cheese making—and how long the cheese takes to reach maturity.
- Processed cheeses are made with natural cheese, plus additions like water, milk, and/or oil. These additives are added to natural cheese to give processed cheese a very smooth texture and may also improve flavor or melting or may keep the cheese fresh for longer periods of time.
- Processed cheese will always be labeled as processed somewhere on the package

Dairy Group Recommendations	
Age groups	How much dairy per day?
Children 2 – 3 years	2 cups
Children 4 – 8 years	2 ½ cups
Boys and Girls 9 – 13 years	3 cups
Boys and Girls 14 – 18 years	3 cups
Men and Women 19 + years	3 cups
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On this slide we can see how much dairy we need every day. You will see that our need for dairy foods changes with our age

- Children age 2-3 only need 2 cups of dairy per day.
- From age 4 to 8, the requirement goes up to 2 ½ cups per day
- From age 9 and up, everyone needs 3 cups of dairy foods each day
 - Notice that this is for everyone over 9 years old! Boys, girls, men, and women. Some people are surprised by this because there is so much attention on how important milk and dairy foods are for women that they don't realize men need them too!

Why do we need dairy foods?

- Calcium
 - Important for building bones and teeth
 - Helps maintain bone mass
 - Important for muscle function
- Vitamin D
 - Important for bones
 - Helps maintain calcium and phosphorous levels

- Potassium
 - Important mineral
 - Helps regulate blood pressure
 - Important for muscle and nerve function
- Protein
 - Important for building and maintaining muscle
 - Needed in all body processes
 - Heals and repairs







- The amounts recommended on the previous slide may seem like a lot. But dairy foods are really important sources of calcium, vitamin D, potassium, and protein in our diets.
 - Calcium is important for both building and maintaining strong teeth and bones.
 Calcium is also an important part of how our muscles know it's time to do work
 - Vitamin D works with calcium to help strengthen our bones and teeth, and also
 has many other important roles in the body like helping to regulate the levels of
 calcium and phosphorus that are available for making bones.
 - Potassium is an important mineral! It is important for maintaining a normal blood pressure. It is also important for muscle and nerve function. Potassium is also found in fruits and vegetables.
 - Dairy foods are also important sources of protein in our diet. Protein is important for building strong muscles, and it is involved in all of the everyday processes in every cell in our body! Protein helps heal and repair.

- Juniors should prepare a dairy foods snack from the 4-H Foods recipe book
- Seniors may prepare any recipe
 - Each serving must include ½ cup of milk, yogurt or shredded cheese
 - A little math will help us figure this out





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Now that we know why dairy foods are important parts of our everyday nutrition and how much we need, we will look at meeting the requirements of the dairy foods project

- Juniors should prepare a dairy foods snack from the 4-H Foods recipe book
- Seniors may prepare any recipe as long as each serving of the recipe includes ½ cup of milk, yogurt, or shredded cheese per serving.
 - How much dairy is that? A little math will help us figure it out!

Please Note!

- According to your project objectives, the following foods do <u>NOT</u> count toward the total dairy in your recipe:
 - Neufchatel cheese
 - Cream cheese
 - Sour cream
 - Cottage cheese





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Please note that according to your project objectives, the following foods do <u>NOT</u> count toward the total dairy in your recipe: Neufchatel cheese, which is like cream cheese, but lower in fat, cream cheese, sour cream, and cottage cheese. Neufchatel cheese, cream cheese, and sour cream provide a lot of fat and very little calcium or protein per serving. They do not count as dairy foods according to MyPlate. Cottage cheese is a dairy food according to MyPlate, but it has much less calcium per serving. It takes two cups of cottage cheese to count as one cup serving of dairy foods in MyPlate. So, to make our math easier, we exclude cottage cheese from the total dairy in your recipe as well.

Now, with this information and a love for dairy foods, let's learn how to calculate how much dairy is needed to meet the ½ cup dairy per serving requirement for our recipe.

Warning! The next slides involve math. Specifically, a lot of work with fractions. If you need help with your math, check out the 4-H foods projects website under additional resources for the dairy foods module.





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Warning! The next slides involve math. Specifically, a lot of work with fractions. If you need help with your math, check out the 4-H foods projects website under additional resources for the dairy foods module. These websites are also listed on the notes of this page and at the end of this module.

http://www.aaamath.com/ - free, no registration required and sorted by subject (can select "fractions") & complete practice problems
http://www.mathsisfun.com/ - free, no registration required and sorted by subject (select "numbers", then "fractions menu") & explore activities and examples
http://www.mathabc.com/ - free, no registration required and sorted by grade level (4th, 5th, and 6th have fractions problems)
http://www.xtramath.org - free, but parent registration is required
https://www.khanacademy.org/ - free, but parent registration is required

- To determine if our recipe meets requirements we must:
 - 1. Identify how many servings the recipe makes
 - 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
 - 3. Add up the milk, yogurt, and shredded cheese in the ingredients list
 - 4. Compare to the amount determined in step 2





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Ok, so determine if our recipe meets requirements we must:

- 1. Identify how many servings the recipe makes
- 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
- 3. Add up the milk, yogurt, and shredded cheese in the ingredients list of the recipe
- 4. Compare to the amount determined in step 2

Mexican Lasagna, Makes 8 Servings

1 pound lean ground beef

1 package taco seasoning mix

½ cup shredded cheddar cheese

½ cup shredded pepper jack cheese

1 can peeled and diced tomatoes with juice

10 corn tortillas

1 cup prepared salsa

¼ cup low fat plain Greek yogurt







- Let's say we found this Mexican Lasagna recipe that we would like to consider for our dairy foods project. This recipe seems like it has a lot of ingredients, but is it enough to meet the requirements of our dairy foods project? Take a deep breath and get ready to do a little math!
- You may want to go through the next part of this presentation more than once to make sure you understand how to count up your ingredients. And if you need to brush up on your fractions, remember to check out the additional resources list for the Dairy Foods module on the 4-H website.

- To determine if our recipe meets requirements we must:
 - 1. Identify how many servings the recipe makes
 - 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
 - 3. Add up the milk, yogurt, and shredded cheese in the ingredients list
 - 4. Compare to the amount determined in step 2





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Our first step is to identify how many servings our recipe makes.

Mexican Lasagna, Makes 8 Servings

- 1 pound lean ground beef
- 1 package taco seasoning mix
- ½ cup shredded cheddar cheese
- ½ cup shredded pepper jack cheese
- 1 can peeled and diced tomatoes with . .
- juice
- 10 corn tortillas
- 1 cup prepared salsa
- ¼ cup low fat plain Greek yogurt





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We can see that this recipe makes 8 servings.

This information is essential for the judges to be able to determine if you have met the requirement of ½ cup dairy per serving. Please make sure the recipe card you display at competition includes the recipe yield, which is the number of servings the recipe makes.

- To determine if our recipe meets requirements we must:
 - 1. Identify how many servings the recipe makes
 - 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
 - 3. Add up the milk, yogurt, and shredded cheese in the ingredients list
 - 4. Compare to the amount determined in step 2





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Next, we need to determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving.

- 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
- To do this, we multiply the number of servings in the recipe by ½
- Let's calculate:
 - 8 servings x ½ cup/serving = $\frac{8}{1} \times \frac{1}{2} = \frac{8}{2} = 4$ cups!
 - This recipe must have 4 cups of milk, yogurt, and/or shredded cheese total to meet the dairy foods project requirements







- How much milk, yogurt, or shredded cheese does a recipe with 8 servings need in order to meet the Dairy Foods Project requirement of ½ cup of milk, yogurt, or shredded cheese per serving? Let's figure it out!
- To do this, we multiply the number of servings in the recipe by ½
- So we calculate 8 times ½ equals 8 over 1 times 1 over 2. Since 8 times 1 is 8, and 1 times 2 is 2, this equals 8 over 2. 8 over 2 can be simplified to 4 cups because 8 divided by 2 is 4, with no remainder.
- So this recipe must have 4 cups of milk, yogurt, and/or shredded cheese total to meet the dairy foods project requirements

- To determine if our recipe meets requirements we must:
 - 1. Identify how many servings the recipe makes
 - 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
 - 3. Add up the milk, yogurt, and shredded cheese in the ingredients list
 - 4. Compare to the amount determined in step 2





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Next, we need add up the milk, yogurt, and shredded cheese in the ingredients list



If we look at our recipe, we can identify the foods that count, which is any milk, yogurt, or shredded cheese. So for this recipe, we have ½ cup shredded cheddar cheese, ½ cup of pepper jack cheese, and ¼ cup of low fat plain greek yogurt. So we need to add up ½ cup plus ½ cup plus ¼ cup.

- Let's calculate:
 - $\frac{1}{2} cups + \frac{1}{2} cups + \frac{1}{4} cups = ?$

$$\frac{1}{2} + \frac{1}{2} + \frac{1}{4} =$$

$$\frac{\frac{2}{4} + \frac{2}{4} + \frac{1}{4} = \frac{5}{4}}{\frac{5}{4} = 1\frac{1}{4}}$$

 So this recipe has a 1 ¼ cups of milk, yogurt, and/or shredded cheese total!





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How do we add this up? Remember, to add fractions, we need them to have the same number on the bottom. We will convert everything to fourths so that we can add these fractions together. So, we multiply the numerator and the denominator by 2 and $\frac{1}{2}$ becomes 2/4. So 2/4 plus 2/4 plus $\frac{1}{2}$ equals 5/4. To simplify the fraction, we take 5 dived by 4 and this is 1 with a remainder of 1 so 5/4 is equal to 1 $\frac{1}{2}$!

This means our Mexican lasagna recipe has 1 ¼ cups of milk, yogurt, and shredded cheese!

- To determine if our recipe meets requirements we must:
 - 1. Identify how many servings the recipe makes
 - 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
 - 3. Add up the milk, yogurt, and shredded cheese in the ingredients list
 - 4. Compare to the amounts determined in step 2 and 3





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Lastly, we need to compare the amounts determined in steps 2 and 3

- 2. Determine the total amount of milk, yogurt, or shredded cheese the recipe needs to have to provide ½ cup per serving
- To do this, we multiply the number of servings in the recipe by ½
- Let's calculate:
 - 8 servings x ½ cup/serving = $\frac{8}{1} \times \frac{1}{2} = \frac{8}{2} = 4$ cups!
 - This recipe must have 4 cups of milk, yogurt, and/or shredded cheese total to meet the dairy foods project requirements





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• In step 2, we determined that we needed 4 cups of milk, yogurt, and/or shredded cheese total to meet the requirement of ½ cup per serving

- 3. Add up the milk, yogurt, and shredded cheese in the ingredients list
- Let's calculate:

-
$$\frac{1}{2}$$
 cups + $\frac{1}{2}$ cups + $\frac{1}{4}$ cups = ?

$$\frac{2}{4} + \frac{2}{4} + \frac{1}{4} = \frac{5}{4}$$

$$\frac{5}{4} = \boxed{1\frac{1}{4}}$$

So this recipe has a total of 1 ¼ cups of milk, yogurt, and/or shredded cheese total!





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In step 3, we determined our recipe had 1 ¼ cups total of milk, yogurt, and/or shredded cheese

4. Compare to the amounts determined in steps 2 and 3

1 1/4 cups is less than 4 cups

This recipe does NOT meet the requirements for the dairy foods project!





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So if we compare the amounts determined in steps 2 and 3, we will see that the 1 and ¼ cups we have in our recipe is less than the 4 cups that we determined we needed So, this recipe does NOT meet the requirements for the dairy foods projects.

- Yes, that was a bit of math, but we wanted to give you a more complicated example so your recipe seems easier to figure out!
- If you need help with math, see the 4-H foods projects website for additional resources.





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Yes, that was a bit of math, but we wanted to give you a more complicated example so your recipe seems easier to figure out!

If you need help with math, see the 4-H foods projects website for additional resources.

Key Messages

- The dairy group is one of the 5 MyPlate food groups
- We depend on the dairy group for calcium, vitamin D, potassium, and protein
- It is important that you check to see if your recipe provides enough milk, yogurt, or shredded cheese for the dairy foods project (and this may mean doing a little bit of math)
- www.choosemyplate.gov is the best source for more information about foods in the dairy foods group
- See the additional math resources on the last slide of this presentation for help with fractions and math





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IN the end, it really comes down to these key messages from the dairy foods module:

- The dairy group is one of the 5 MyPlate food groups
- We depend on the dairy group for calcium, vitamin D, potassium, and protein
- It is important that you check to see if your recipe provides enough milk, yogurt, or shredded cheese for the dairy foods project (and this may mean doing a little bit of math)
- www.choosemyplate.gov is the best source for more information about foods in the dairy foods group
- See the additional math resources on the last slide of this presentation for help with fractions and math

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- Thank you for your attention. I know you will do great.
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References

- All information in the Nutrition for 4-H Foods Projects Modules comes from www.choosemyplate.gov.
 - Please start with <u>www.choosemyplate.gov</u> for all of your nutrition research
- For recipes:
 - USDA What's Cooking, USDA Mixing Bowl: http://www.whatscooking.fns.usda.gov/
- A few other resources for really interested 4-Hers:
 - General Nutrition Information, UGA FACS Extension:
 - http://www.fcs.uga.edu/extension/food-select-and-prepare-healthier-food
 - http://www.fcs.uga.edu/extension/food-eat-right





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