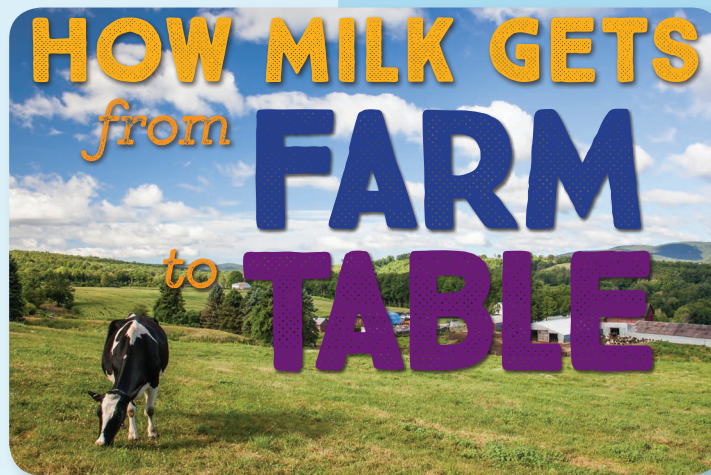


From Cow to You:



DEAR EDUCATOR,

As an educator, you know that sustainability is a vital part of our world's ecological balance, but your students might not fully understand how sustainability personally affects them. In many ways, it starts with the food they eat and drink.

The activities in this kit, created by the curriculum experts at Young Minds Inspired (YMI), will help your students make a personal connection to the concept of sustainability through their own eating habits and through the example of New England's regional dairy farmers, for whom sustainable farming is a priority.

Designed to enhance your classroom's health and science curriculum for students in grades 5 through 8, these activities support deeper-level thinking skills and stimulate discussion about proper nutrition and environmental sustainability.

We hope that you will share this program with other teachers in your school. The materials are copyrighted, but you may make as many copies as necessary to meet your students' needs.

Please use the enclosed reply card or comment online at ymiclassroom.com/feedback-nedfc to let us know your thoughts on this program. We look forward to hearing from you.

Sincerely,

Dr. Dominic Kinsley
Editor in Chief, Young Minds Inspired



Questions? Contact YMI toll-free at 1-800-859-8005 or by email at feedback@ymiclassroom.com.

Local funding provided in part by the Dairy Farm Families of Connecticut



TARGET AUDIENCE

Elementary and middle school students in grades 5-8.

PROGRAM OBJECTIVES

- Educate students about local agriculture and its importance to the community.
- Reinforce the USDA MyPlate nutrition guidelines for healthy eating.
- Teach how sustainability and preventing food waste can be part of our everyday lives.

PROGRAM COMPONENTS

- This one-page teacher's guide.
- Three reproducible student activity sheets.
- A colorful classroom wall poster.
- A reply card for your comments, or comment online at ymiclassroom.com/feedback-nedfc.

HOW TO USE THIS PROGRAM

Photocopy this teacher's guide and the three activity sheets before displaying the poster. Prepare the materials for each activity in advance. Visit ymiclassroom.com/nedfc to review the program's standards alignment.

Activity 1 DAIRY FARMING

This activity takes students "behind the scenes" to learn about the science, hard work, and animal care that goes into every glass of milk.

Begin by showing students the video *From Farm to You: The Story of Milk*, at https://youtu.be/y_QVh5YqvGo. Afterwards, ask students to share some of the ways the cows are cared for — clean, soft bedding made from sand, wood chips, and other materials; barns to provide shade and protection from the elements; misters and fans to keep

cows cool during hot summer days; 24/7 access to a science-based diet and fresh water; and a healthy environment.

Tell students that this kind of care, along with care throughout the production process, helps ensure quality dairy products. Ask students to share some of the things about milk production that they learned from the film, and from reviewing the poster. Responses might include that the milk is filtered, cooled, and stored until it can be taken to a processing plant, which usually happens daily or every other day. Once there, the milk must pass strict quality and safety tests before it is pasteurized, which means it is heated enough to destroy any potentially harmful bacteria. Then, the milk is homogenized, which gives it its consistent texture. Finally, the milk is packaged and transported to schools and supermarkets in refrigerated trucks. Milk goes from the cow to you within two to three days.

Now distribute the activity sheets for students to answer the questions and create a "diary" page describing a day in the life of a dairy cow.

Activity 2 DAIRY ALL DAY

Remind students that eating a healthy breakfast provides energy and improves their memory and focus throughout the day. Show them the MyPlate graphic at choosemyplate.gov, and have them think about which food groups on that "plate" are most commonly eaten for breakfast. Point out that popular dairy foods like milk, cheese, and yogurt provide important nutrients such as calcium and protein. For this reason, the USDA recommends that students ages 9-18 enjoy three servings of dairy foods each day.

Distribute the activity sheet and have students answer the questions. Then review the answers in a class discussion.

Part 1 Answers:

- 1½ servings.
 - Answers will vary, but Sarah could eat ½ cup of yogurt and 1½ ounces of hard cheese, or an 8-oz. glass of milk and ½ cup of yogurt.
- Answers will vary; example — oatmeal with a banana and ½ cup of milk, an egg, and ½ cup of yogurt.

Part 2 Answers: calcium, 75%; Pantothenic Acid, 60%; phosphorus, 60%; protein, 48%; Vitamin A, 45%; Vitamin D, 45%; Vitamin B12, more than 100%; riboflavin, more than 100%; niacin, 30%.

Activity 3

SUSTAINABILITY AND FOOD WASTE: HONORING THE HARVEST

Distribute the activity sheet. Tell students that nutrition is wasted unless foods are consumed — in other words, it's not nutrition if it's not eaten! Wasting milk also wastes the work and resources dairy farmers put into supporting sustainability. Cows set the example: They eat things we can't eat, such as citrus pulp, cottonseeds, and almond hulls, and turn them into nutrition. Similarly, some farmers use methane digesters to make cow-powered electrical energy from manure. Also, because milk is a local/regional food, it requires less transportation, reducing the environmental impact from fossil fuels.

Part 1: To have students gauge the nutritional cost of food waste, ask them to calculate the percentage of protein, calcium, and Vitamin D that would be lost if they drank only a third of the container shown on the activity sheet. **Answers:** protein, more than 10%; calcium, more than 16%; Vitamin D, 10%.

Part 2: Divide the class into groups and ask each to create ideas for a marketing campaign to encourage others to drink the milk they get at school, not toss it out. When groups have finished their planning, have them share their ideas as a class and vote on the best approach to take. As an extension, have them put their campaign to work by approaching school administration staff for permission to display their poster in the cafeteria.

RESOURCES

- New England Dairy & Food Council: newenglanddairyCouncil.org
- All About the Dairy Group: choosemyplate.gov/dairy
- Breakfast for Learning: frac.org/wp-content/uploads/breakfastforlearning-1.pdf
- *From Farm to You: The Story of Milk*: mustbethemilk.com/local-farmers/

LOCAL MILK IS AVAILABLE 365 DAYS A YEAR.





DAIRY FARMING

REPRODUCIBLE
MASTER

The milk you enjoy every day comes from cows raised on local dairy farms. Dairy farmers not only put a lot of work and resources into caring for their cows, they also put a lot of effort into producing milk in a sustainable way that helps preserve the environment.

Part 1:

Think about what you learned in the video and from the poster, and then answer these questions.

1. In what ways do dairy farmers show that they care about their cows?

2. What are some of the ways dairy farmers make sure that the milk we purchase at the store or drink at school is fresh and safe?

3. Why do you think it is important for dairy farmers to take good care of the land and water on a dairy farm?



Part 2:

Moo! Time to rise and shine! What would your day be like if you were a dairy cow instead of a student in school? Use this space to write a diary entry about your day. Include any conversations you might have had with your cow friends!





DAIRY ALL DAY

REPRODUCIBLE MASTER

Part 1:

You've probably heard that kids your age need **three servings of dairy** every day. But did you know that there are many delicious ways to get the dairy nutrition you need each day? The chart below shows different types of dairy foods in the amounts that equal one serving of dairy nutrition for each. Using this chart, answer the questions below:

MILK	• 1 cup (8 fluid ounces)
YOGURT	• 1 cup yogurt (8 fluid ounces)
CHEESE	<ul style="list-style-type: none"> • 1½ ounces hard cheese (Cheddar, mozzarella, Swiss, Parmesan) • ½ cup shredded cheese <p>For more dairy suggestions and servings, go to choosemyplate.gov/dairy.</p>

BREAKFAST MENU

Dairy: _____

Dairy: _____

Fruit/Veggie: _____

Protein: _____

Grain: _____

Part 2:

Use this graphic to calculate the % Daily Value (DV)* of each of these nutrients you would get if you drank 3 glasses of milk a day.

Calcium: _____ Protein: _____ Vitamin B12: _____

Pantothenic Acid: _____ Vitamin A: _____ Riboflavin: _____

Phosphorus: _____ Vitamin D: _____ Niacin: _____

1. Sarah drinks 4 oz. of milk with her breakfast. At lunch, she sprinkles ½ cup of shredded cheese on her chili. Which dairy foods can she eat at dinner to meet her recommended daily amount, and how much should she eat of those products?

SARAH'S DAIRY DAY

Breakfast: 4 oz. milk
Lunch: ½ cup shredded cheese

How many more servings of dairy does Sarah need for this day?

Which dairy foods and how much of each does Sarah need to get her three servings of dairy nutrition for the day? _____

2. Create a breakfast menu using at least two of the dairy foods in the chart. The breakfast menu must include ½ of the recommended three daily servings of dairy, as well as a fruit or veggie, protein, and grain.

MILK'S UNIQUE NUTRIENT PACKAGE

BENEFITS FOR STRONGER BONES AND BETTER BODIES



CALCIUM (25% DV)

Helps build and maintain strong bones and teeth.

PANTOTHENIC ACID (20% DV)

Helps your body use carbohydrates, fats, and protein for fuel.

PHOSPHORUS (20% DV)

Helps build and maintain strong bones and teeth, supports tissue growth.

PROTEIN (16% DV)

Helps build and repair muscle tissue.

VITAMIN A (15% DV)

Helps keep skin and eyes healthy, helps promote growth.

VITAMIN D (15% DV)

Helps build and maintain strong bones and teeth.

VITAMIN B12 (50% DV)

Helps with normal blood function, helps keep the nervous system healthy.

RIBOFLAVIN (35% DV)

Helps your body use carbohydrates, fats, and protein for fuel.

NIACIN (10% DV)

Used in energy metabolism in the body.

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.





Sustainability and Food Waste: HONORING THE HARVEST

REPRODUCIBLE MASTER

Part 1:

Did you ever think about what happens when you toss out a partly full carton of milk or container of yogurt? Wasting food wastes a dairy farmer's land, water, and hard work. That's why dairy farmers' commitment to sustainability includes reducing food waste and educating others on how to do the same.

Wasting food also wastes nutrition — it's not nutrition if it's not eaten! Look at the information on this nutrition label from a cafeteria-size milk container. Calculate the % Daily Value for protein, calcium, and Vitamin D that would be lost from this dairy serving if you only drank one third of the carton.



PROTEIN _____

CALCIUM _____

VITAMIN D _____

Part 2:

Now that you know how important it is not to waste nutrition, can you help dairy farmers spread the word? As a group, create a marketing campaign to encourage others to drink the milk they get at school and not toss it out. Follow the directions below to help shape your campaign plan. Then share your group's campaign with the rest of your class.

1. Create a slogan for your campaign — something short and powerful:

2. Create a logo for your campaign. Draw your logo in this box.

3. Summarize key points you want to communicate:

- _____

- _____

- _____

4. On a separate sheet of paper, create a campaign kick-off poster. The poster should include your slogan and your logo, as well as the key points you summarized above. Ask your cafeteria staff to display your campaign.



From Cow to You: HOW MILK GETS

from FARM to TABLE



1. FARM FAMILIES

New England is home to more than 1,700 dairy farms, most passed along from generation to generation. Kids first learn about dairy farming from their parents and grandparents. Later, they attend college to learn about caring for their animals, planting and harvesting crops, and running a successful business, all to produce nutritious, wholesome milk for you.

2. CARING FOR COWS



Farmers treat their cows well, feeding them wholesome food, much of which is raised right on the farm. The cows even have their own nutritionist to help them get a balanced diet.



3. COW COMFORT

Happy cows make more milk. Cows are milked 2-3 times a day, using machines that do not harm them. Cows like to be milked!



4. FROM FARM TO PLANT

A refrigerated tanker truck takes the milk from the farm to the processing plant to be inspected.



5. AT THE PROCESSING PLANT

The milk is tested, homogenized, and pasteurized.



6. DAIRY FAVORITES

Milk is also made into other favorite dairy products such as yogurt and cheese.



7. DAIRY EVERYWHERE

Milk is delivered to you at school or to your local store within 2-3 days of leaving the farm.



8. LAST STOP...TO YOU!

Most of us need 3 servings of dairy a day.



Drinking all your milk reduces food waste and helps preserve precious land resources.

9. SAVE EARTH'S RESOURCES

10. BOOST YOUR NUTRITION

Milk provides 9 essential nutrients that help keep you healthy.

CALCIUM
PANTOTHENIC ACID
PHOSPHORUS
PROTEIN
VITAMIN A
VITAMIN D
VITAMIN B12
RIBOFLAVIN
NIACIN

4.

5.

6.

7.

8.

9.

2.

1.

10.

3.

4.

5.

6.

7.

8.

9.

10.