

Healthy Farming, Healthy You

Dear Educator,

Dairy farmers share much in common with the families who depend on them for fresh, wholesome dairy products. That's what your students will discover with this free educational program from the American Dairy Association and Dairy Council, created in cooperation with the curriculum specialists at Young Minds Inspired (YMI).

These standards-based lessons support the social studies, science, and health curriculum for grades 2-4, introducing students to the wide range of skills required on a dairy farm, showing them how dairy farmers help protect the environment, and reminding them (and their parents) that 2.5 to 3 cups of milk or another dairy food are essential for a balanced diet every day.

Students will also get to visit real dairy farms through a fun video whiteboard activity quiz.

We hope that you will share this program with other teachers in your school. Although the materials are copyrighted, you may make as many copies as needed for educational purposes.

Please use the enclosed reply card or comment online at www.ymiclassroom.com/adadc to provide feedback. We look forward to hearing from you.

Sincerely,

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 For questions, contact us toll-free at 1-800-859-8005 or by email at feedback@ymiclassroom.com.

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Target Audience

Elementary school students in grades 2-4 and their parents.

Program Objectives

- Help students learn about the career skills that apply to dairy farming.
- Raise awareness of sustainable practices adopted by dairy farmers.
- Explore how dairy farmers are using new technologies.
- Reinforce the **MyPlate** guideline for milk and dairy foods as part of a balanced diet every day.



Program Components

- This one-page teacher's guide.
- Three reproducible activity sheets.
- A colorful classroom wall poster.
- **Meet the Milk Makers!**, a digital whiteboard activity, available at www.ymiclassroom.com/adadc.
- A reply card for your comments, or comment online at www.ymiclassroom.com/adadc.

How to Use This Program

Photocopy the teacher's guide and activity sheets before displaying the poster. Schedule the activities for your class and have students take their sheets home to complete each with a parent. To review alignment with Common Core and national standards, visit www.ymiclassroom.com/adadc.

How to Use the Wall Poster

Use the timeline to discuss how American dairy farming has changed over the years. Compare the dairy farm profiles to discuss how large and small dairy farms alike rely on modern technology and family tradition.

How to Use the Whiteboard Activity

Meet the Milk Makers! (available at [ymiclassroom.com/adadc](http://www.ymiclassroom.com/adadc)) is an interactive video-based quiz that takes students on a virtual field trip to a variety of dairy farms. Share the activity with students on your digital whiteboard, or have students explore

the activity on a home computer or Flash-friendly mobile device.

Activity 1 Dairy Farmers Do It All

Part 1. Have students match the tasks on the to-do list with the job titles. Use the talking points below to discuss how dairy farmers use skills from many professions to keep their cows healthy and their farms productive, and to protect the environment. Then have students write or tell which of the farmer's tasks they'd want to help with, and why. (Have students visit www.dairyfarmingtoday.org/Life-On-The-Farm/Pages/DayInTheLife.aspx to learn more about dairy farm life.)

1. Nutritionist: Most dairy farmers feed cows a high-nutrition blend of grains in addition to pasture grass.

2. Tech Expert: Dairy farmers rely on high-tech equipment, like robotic milking machines that can milk each cow automatically whenever it's ready.

3. Environmentalist: Dairy farmers use sustainable practices like composting cow manure and recycling cleaning water.

4. Veterinarian: Dairy farmers monitor their cows' health for signs of illness, poor nutrition, and injury.

5. Mechanic: Dairy farmers need the skills to keep all kinds of farm machinery working properly.

6. Carpenter: Dairy farmers need the skills to build almost any structure that will help keep their farm productive.

7. Computer Specialist: Dairy farmers use computer systems to manage all aspects of the farm, from energy use to milk production and the health of the herd.

Part 2. Use the points below to discuss the challenges weather poses for dairy farming.

- Excessive heat stresses dairy cows, reducing their milk production. Heat waves might require installing fans to cool cows kept inside, out of the sun.
- Drought can increase feed costs and strain the water supply needed to keep cows hydrated.

Part 3. Have students work with a parent to find a news story about some

event that could have an impact on dairy farmers in your region. Display them after discussing the stories in class.

Activity 2 Farming for the Future

Part 1. Discuss the concept of environmental *sustainability*, then have students match each sustainable dairy farming practice with its counterpart in the home and come up with additional examples. (For background on methane digesters, see youtube.com/watch?v=J0utt6H6ZyE.) **Answers:** 1-B; 2-E; 3-A; 4-D; 5-C.

Part 2. Share the Green Schools

Initiative website (greenschools.net) and the *Green Classroom Checklist* with students. Have students discuss and then work in small groups to implement some practices on the checklist.

Part 3. Have students work with a parent to create a Green Family checklist for their home. Ask students to bring their checklists to class, so they can exchange ideas for making sustainability an everyday family concern. Then have students visit www.dairyfarmingtoday.org/Caring-For-The-Environment/Pages/CaringForTheEnvironment.aspx and work in groups to create raps, videos, or posters about how dairy farmers practice sustainability. Invite students to share their creations with parents.

Activity 3 Dairy Power!

Have students take this activity sheet home, and plan a day for them to bring in their lunch for their **MyPlate** show-and-tell. Use their reports about the veggies they and their parents chose for the Scramble recipe to graph the most popular choices.

Resources

- www.ymiclassroom.com/adadc
- www.choosemyplate.gov

Dairy Farming in the TriState Region

- American Dairy and Dairy Council – www.adadc.com
- Dairy Farming Today – www.dairyfarmingtoday.org
- Dairy Farming Videos and Field Trips – www.fesko.com

Agriculture in the Classroom

- NY: www.agclassroom.org/ny
- NJ: www.njagsociety.org
- PA: www.pafbfriends.org

Dairy Farmers Do It All

Reproducible Master

Part 1

Being a dairy farmer requires many skills. Read Farmer Steve's to-do list for today. Then match each of his tasks to the corresponding job title.



Farmer Steve's To-Do List

1. Mix feed for the cows.
2. Clean and test the robotic milking machines.
3. Update manure composting plan.
4. Examine newborn calves.
5. Repair tractor.
6. Design and build an equipment shed.
7. Input the day's milk production on the farm management system.

Job Titles

-  Mechanic
-  Computer Specialist
-  Veterinarian
-  Nutritionist
-  Tech Expert
-  Environmentalist
-  Carpenter

Which task on the to-do list would you most like to help Farmer Steve complete? Why?

Part 2

With so much to do each day, dairy farmers have to plan ahead. And they have to be ready to change their plans when something unexpected happens. Read the headlines at right. Then share your ideas about how these events could affect the daily routine on a dairy farm.



Part 3

Ask a parent to help you find a news story online or in a newspaper about an event that could affect dairy farmers in your region. Bring the story to school to share with your class.



Fun Facts!

- Cows drink 30-40 gallons of water a day! How much water do you drink each day?
- Farmers use a huge mixer to create the right blend of feed for their cows. Do you ever mix your food?
- Dairy farmers use GPS (global positioning systems) to plant their cornfields. Have you ever used a GPS to find your way?



Part 1 Dairy farmers care for the communities where they live. They work to protect natural resources like water, soil, and air by practicing environmental **sustainability**. That means finding ways to restore natural resources and recycle waste, so that Earth's ecosystems remain healthy far into the future.

Read about some of the ways dairy farmers practice environmental sustainability. Then match each of these sustainable farming practices with a similar practice at home by writing the correct letter in the space.

Sustainability on the dairy farm:

1. Use new technologies, like methane digesters, to help save energy.
2. Compost cow manure to keep the community's air and water clean.
3. Use recycled materials, like sand, to make bedding for cows.
4. Use recycled water for things like washing barn floors and irrigating fields.
5. Grow grains and other crops for feeding cows directly on the farm.



Sustainability at home:

- A. Collect plastic, glass, paper, and metal for recycling into new products.
- B. Turn off lights, computers, televisions, and other electrical appliances when not in use.
- C. Grow a vegetable garden at home, or eat food grown in your area.
- D. Take short showers instead of baths and turn off the faucet when brushing teeth.
- E. Compost fruit and vegetable waste from meal preparation and leftovers.



Methane digester

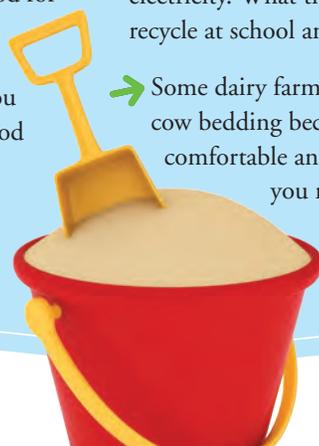


Part 3 How does your family practice sustainability? Take this sheet home to share with a parent, and use the "at home" list above to create your own Green Family checklist. To get started, visit the New York State Department of Environmental Conservation *Make a Difference* webpage at www.dec.ny.gov/public/337.html. Then show your family how dairy farmers in your region are working to protect the environment by visiting the *Caring for the Environment* section of the **Dairy Farming Today** website (www.dairyfarmingtoday.org/Caring-For-The-Environment/Pages/CaringForTheEnvironment.aspx).

Part 2 Like dairy farmers, you can practice sustainability every day, even at school. Visit the **Green Schools Initiative** website at <http://greenschools.net> for ideas. Then download the *Green Classroom Checklist* (greenschools.net/downloads/Green%20Classroom%20Checklist.doc) and talk about how you can use the Three R's — reduce, recycle, and reuse — to help protect the environment.

Fun Facts!

- Many dairy farmers grow the food for their cows right on the farm. Do you grow any food at home?
- Dairy farmers can recycle the methane gas in cow manure to create electricity. What things can you recycle at school and at home?
- Some dairy farmers use sand for cow bedding because it is so comfortable and clean. Can you remember the last time you lay in the sand?



For Kids

Help Plan Your School Lunch!

With a parent, plan a great-tasting school lunch that includes the five **MyPlate** food groups. Remember that combination foods can count for more than one food group. (For example, a slice of pizza combines dairy, grains, and vegetables.)



My School Lunch Menu

Dairy: _____

Fruits: _____

Grains: _____

Vegetables: _____

Protein: _____

Fun Facts!

- Dairy cows get healthy fiber because their extra stomach compartments help them digest orange peels and even cotton seeds! How healthy is your diet?
- Cows rest 12-14 hours each day. How many hours do you rest each day?

For Parents Pack School Lunches with Dairy Power!

The school lunch program provides school children with great nutritionally balanced meals, but if you make your child's lunch, here are a few tips. Make it a power-packed day by including dairy products like low-fat cheese, yogurt, cottage cheese, and milk! Dairy products provide growing bodies with calcium*, an essential nutrient for strong bones that is especially important at this time in your child's development, when bone-mass production is at its peak. Remember that USDA **MyPlate** guidelines recommend 2.5 to 3 cups of milk or another dairy food every day for children 4-8 years old. Visit www.choosemyplate.gov/food-groups/dairy.html for more information.



School Lunch Time-Savers

-  Pack lunch-sized portions of dinner leftovers, like macaroni and cheese, into small re-usable containers that can be quickly placed in lunchboxes the next morning.
-  Slice and dice different varieties of cheese and fresh vegetables like celery, cucumber, and broccoli over the weekend, then store them in the fridge for quick access.
-  Mix yogurt or cottage cheese into fresh fruits stored in small, reusable containers.

Fresh, Local, Nutritious Milk

Did you know that your child's school lunch program offers milk sourced from local dairy farmers? To find out more about the ways that farmers serve your community, visit the American Dairy Association and Dairy Council website at www.adadc.com!

Dairy Power – Any Time, Any Day

Try this easy recipe with your child!

Choose two of your favorite vegetables from the list below and write them into this delicious dairy-powered recipe. Then have a parent choose a third vegetable to create your own family recipe to try at home.



Veggie and Cheese Scramble

Ingredients:

- 2 eggs
- 1 tbsp. butter
- ¼ cup grated cheese (cheddar, mozzarella, pepper jack, etc.)
- Salt and pepper to taste
- Kid vegetable choice #1:

Kid vegetable choice #2: _____

Parent vegetable choice: _____

Directions:

1. Wash and cut veggies into small pieces. Set aside.
2. Crack eggs into a bowl and discard eggshells.
3. Beat eggs with a fork until smooth.
4. Stir in grated cheese and chopped vegetables.
5. Season with salt and pepper.
6. Place butter in pan and turn heat to medium high.
7. When butter has melted, pour egg mixture into bowl, stirring constantly until cooked.
8. Serve with a glass of fresh milk and enjoy!

Veggie List

Broccoli Cauliflower Kale Onion
Spinach Swiss Chard

* Children with dairy allergies must use other food sources for calcium and Vitamin D, such as dark green leafy vegetables or calcium-fortified foods. Children who are lactose intolerant can have lactose-free dairy products.



On the MOO-ve!

Meet some real family farmers who keep dairy farming on the moo-ve with new technologies!

Breezy Hill Dairy Farm, Strykersville, NY

Named for its location on top of a windy hill, this 2,000-acre farm is home to a herd of 800 cows and has been operated by the Almeter family for six generations, dating all the way back to 1870.



Fulper Dairy Farms, Lambertville, NJ

Established in 1909, this 1,200-acre dairy farm is managed by the fifth generation of Fulpers. With a herd of 120 cows, Fulper Dairy Farms offers city kids the chance to help care for a newborn calf during its Summer Camp!



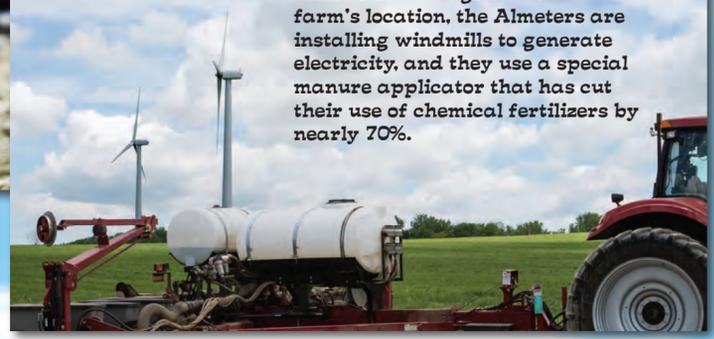
Today's Technology

The Fulpers power their farm with nearly an acre of solar panels, and they recycle their cows' manure to produce liquid fertilizer and compost.



Today's Technology

To take advantage of their farm's location, the Almeters are installing windmills to generate electricity, and they use a special manure applicator that has cut their use of chemical fertilizers by nearly 70%.



Dairy farming has been on the moo-ve since the first cows arrived with the early colonists at Jamestown. Check out this timeline to learn more about the growth and advances in dairy farming in America!

1600

1611
Cows come to America with the Jamestown colonists.

1700

1776
As the United States declares its independence, cows graze on the small family farms that dot the countryside.

1800

1856
Louis Pasteur begins scientific experiments leading to the pasteurization process.

1850
Almost every American household has its own cow to supply the family with milk.

1862
President Abraham Lincoln establishes the U.S. Department of Agriculture.

1878
First automatic milking machine invented.

1879
Thomas Edison invents the incandescent light bulb.

1884
First glass milk bottles used.

1890s
Milk homogenizer invented.

Late 1800s
Farmers begin breeding cows specifically for milk production - dairy cows.

1900
Pasteurization used in all dairy farming.

1914
First milk tanker trucks used to transport milk.

1945
The first year that the use of tractors exceeds the use of horses on farms.

1946
National School Lunch Act signed, designating milk as part of the school lunch menu.

1947
First successful use of a methane digester in American farming, on a hog farm in Iowa.

1994
Farmers begin using satellite technology to track and plan farming practices.

1997
Robotic milking machines invented.

2000

2014
Of the more than 51,000 working dairy farms in the U.S., 97% are family-owned, and all help provide you with fresh, wholesome dairy products all year long!

Local milk is available 365 days a year.