DEAR EDUCATOR,

Your students probably already know that every glass of milk they drink is packed with important nutrients. But they may not know that behind every glass of milk there is a network of dedicated, passionate farmers, each with a unique set of innovative tools and farming techniques to bring high-quality milk and dairy products to their table.

This free educational program, **Cow to You: A Virtual Visit to Two New England Dairy Farms**, is designed to help students make a personal connection to the people and families in your region responsible for producing the nutritious dairy products they consume every day. Students virtually visit two Vermont dairy farms through online 360° videos that let them control with their touchscreen or mouse their own exploration of each farm to learn how New England dairy farmers care for their cows and help protect our environment with sustainable farming practices and 21st-century technology.

Developed by the curriculum experts at Young Minds Inspired (YMI) in cooperation with New England Dairy & Food Council, **Cow to You: A Virtual Visit to Two New England Dairy Farms** can enhance your health and science class plans for students in grades 5 through 8. The program includes classroom activities that support deeper-level thinking skills and stimulate discussion about animal care 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 needs. Please use the enclosed reply card or comment online at ymiclassroom.com/feedback-ned360 to respond about 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.

TARGET AUDIENCE

Students in grades 5-8.

PROGRAM OBJECTIVES

- Educate students about how quality cow care helps produce high-quality milk.
- Inform students about the sustainable farming techniques dairy farmers use to reduce waste and protect the environment.
- Demonstrate how advances in technology improve cow care and environmental stewardship.

PROGRAM COMPONENTS

- This one-page teacher's guide.
- Three reproducible student activity sheets.
- Three online videos that correspond to the activity sheets, available at ymiclassroom.com/ned360.
- A colorful classroom wall poster.
- A reply card for your comments, or comment online at ymiclassroom.com/feedback-ned360.

COW TO YOU: A VIRTUAL VISIT TO TWO NEW ENGLAND DAIRY FARMS

HOW TO USE THIS PROGRAM

Photocopy this teacher's guide and the three reproducible student activity sheets before displaying the poster in your classroom. Preview the three videos available at ymiclassroom.com/ned360, where you will also find a chart outlining the program's standards alignment. Explain to students that they can move around the video to see different parts of the dairy farms as they wish and can pause to review images and read text boxes along the way.

Activity 1

COWS COME FIRST!

This activity takes students on a virtual trip to the Gervais Family Farm in Vermont, where they learn that every glass of milk starts with a healthy, well-cared-for cow.

Begin by having students watch the video *Cows Come First!* at ymiclassroom.com/ned360 (approximately 4:25 minutes) and explore the 360° functionality of the video. Then, ask students to share what they learned about the elements of cow care — access to plenty of nutritious food and water, soft bedding, transponders to monitor health, regular milking, and special practices to nurture calves. Tell students that this kind of care helps ensure that dairy farms produce the highest quality milk and dairy products that students enjoy every day.

Next, distribute the activity sheets. **Part 1** asks students to synthesize the central takeaways from the video by describing various aspects of cow care and why this care is important. **Part 2** encourages students to make a more personal connection to cow care by sharing practices they themselves use to stay healthy and happy.

Activity 2

A PIECE OF PLANET EARTH

Begin by showing students the video *A Piece of Planet Earth* at ymiclassroom.com/ned360 (approximately 3 minutes) and explore the 360° functionality of the video. This video shows how the Poulin Farm has reduced its carbon footprint through sustainable dairy farming practices such as recycling "leftovers" for nutritious cow feed, collecting manure for use as fertilizer, and protecting waterways from runoff. If possible, have students learn more about sustainable dairy farming at www.newenglanddairycouncil.org/dairyfarming/sustainability.

After viewing and discussing the video, distribute the activity sheets. In **Part 1**, students will write a letter to their local paper, mayor, or state representative describing two or three practices dairy farmers use to contribute positively to the environment and keep their communities sustainable. They will explain why these practices are important and the impact they have on people, animals, and the local ecosystem.

In **Part 2**, students will consider what they and their families do to support sustainability as well as broader social policies and practices that contribute to a lasting and healthy environment. After students record their ideas, lead a class discussion about how they and their families reduce/reuse/recycle in order to help sustain the environment. You may wish to brainstorm ideas that you can use in the classroom (e.g., recycling, using less water, turning off unneeded electricity, etc.).

Extension: Have students calculate their personal impact on the planet, using a website such as www3.epa.gov/climatechange//kids/calc/index.html, and compare results in class. Have students with both the lowest and highest carbon footprints share their insights with their peers.

Activity 3

CHANGING WAYS

This activity builds on the video *Changing Ways* at ymiclassroom.com/ned360 (approximately 4:25 minutes), which compares how the Gervais and Poulin dairy farms use different technological tools and sustainable farming practices to achieve the same goals — high-quality cow care, producing nutritious milk, and taking top-notch care of the environment.

After students watch the video, have them share their insights. Examples could include recycling cow manure to produce energy, bedding, and fertilizer; using transponders to monitor cow health, and using robotics to milk cows, improve feeding, and collect manure.

Next, distribute the activity sheets. Students will answer questions analyzing how they think dairy farming would be different without modern technologies, as well as describing a technology they use themselves that improves their lives.

Finally, students will get creative and invent an idea for a new machine or technology to help their lives run more smoothly. After they've completed their descriptions, place students in small groups to discuss their ideas, vote on their favorite invention, and present it to the class.

Extension: Visit New England Dairy & Food Council at www.newenglanddairycouncil.org/schools/farm-to-school for additional farm-to-school ideas designed to enable students to better understand the connection between dairy farms and the dairy products they enjoy every day.

RESOURCES

New England Dairy & Food Council:
www.newenglanddairycouncil.org
Dairy Sustainability:
www.newenglanddairycouncil.org/dairyfarming/sustainability
Calculate Your Emissions:
www3.epa.gov/climatechange//kids/calc/index.html

NEW ENGLAND DAIRY & FOOD COUNCIL

COW TO YOU:

A VIRTUAL VISIT TO TWO NEW ENGLAND DAIRY FARMS

Common Core Standards for ELA, Health, & Consumer and Family Sciences

Grade 5	Activity 1	Activity 2	Activity 3	Poster
ENGLISH LANGUAGE ARTS				
Text Types and Purposes				
CCSS.ELA-Literacy.W.5.1: Write arguments to support claims with clear reasons and relevant evidence.		•	•	
CCSS.ELA-Literacy.W.5.2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	•	•	•	
CCSS.ELA-Literacy.W.5.3: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.				
Production and Distribution of Writing				
CCSS.ELA-Literacy.W.5.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	•	•	•	
Conventions of Standard English				
CCSS.ELA-Literacy.L.5.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	•	•	•	
CCSS.ELA-Literacy.L.5.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling.	•	•	•	
CCSS.ELA-Literacy.L.5.3: Use knowledge of language and its conventions when writing, speaking, reading, or listening.	•	•	•	
Comprehension and Collaboration				
CCSS.ELA-Literacy.SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.	•	•	•	
CONSUMER AND FAMILY SCIENCES				
3.4: Analyze resource consumption for conservation and waste management practices.		•	•	
5.1: Analyze career paths within the facilities management and maintenance areas.	•	•	•	
9.1: Analyze career paths within the food science, food technology, dietetics, and nutrition industries.	•	•	•	
9.5: Demonstrate use of science and technology advancements in food product development and marketing.	•	•	•	•
14.4: Evaluate factors that affect food safety from production through consumption.	•	•	•	
14.5: Evaluate the influence of science and technology on food, nutrition, and wellness	•	•	•	

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A VIRTUAL VISIT TO TWO NEW ENGLAND DAIRY FARMS

Common Core Standards for ELA, Health, & Consumer and Family Sciences

Grade 5 (cont.)	Activity 1	Activity 2	Activity 3	Poster
HEALTH				
Standard 1: Students will comprehend concepts related to health promotion and disease prevention.	•	•	•	•
Standard 3: Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.	•	•		
Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.	•			
Standard 6: Students will demonstrate the ability to use goal-setting and decision-making skills to enhance health.	•	•		
Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.	•	•	•	

Grade 6	Activity 1	Activity 2	Activity 3	Poster
ENGLISH LANGUAGE ARTS				
Text Types and Purposes				
CCSS.ELA-Literacy.W.6.1: Write arguments to support claims with clear reasons and relevant evidence.		•	•	
CCSS.ELA-Literacy.W.6.2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	•	•	•	
CCSS.ELA-Literacy.W.6.3: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.				
Production and Distribution of Writing				
CCSS.ELA-Literacy.W.6.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	•	•	•	
Conventions of Standard English				
CCSS.ELA-Literacy.L.6.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	•	•	•	
CCSS.ELA-Literacy.L.6.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling.	•	•	•	
CCSS.ELA-Literacy.L.6.3: Use knowledge of language and its conventions when writing, speaking, reading, or listening.	•	•	•	
Comprehension and Collaboration				
CCSS.ELA-Literacy.SL.6.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics and texts, building on others' ideas and expressing their own clearly.	•	•	•	•

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A VIRTUAL VISIT TO TWO NEW ENGLAND DAIRY FARMS

Common Core Standards for ELA, Health, & Consumer and Family Sciences

Grade 6 (cont.)	Activity 1	Activity 2	Activity 3	Poster
CONSUMER AND FAMILY SCIENCES				
3.4: Analyze resource consumption for conservation and waste management practices.		•	•	
5.1: Analyze career paths within the facilities management and maintenance areas.	•	•	•	
9.1: Analyze career paths within the food science, food technology, dietetics, and nutrition industries.	•	•	•	
9.5: Demonstrate use of science and technology advancements in food product development and marketing.	•	•	•	•
14.4: Evaluate factors that affect food safety from production through consumption.	•	•	•	
14.5: Evaluate the influence of science and technology on food, nutrition, and wellness.	•	•	•	
HEALTH				
Standard 1: Students will comprehend concepts related to health promotion and disease prevention.	•	•	•	•
Standard 3: Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.	•	•		
Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.	•			
Standard 6: Students will demonstrate the ability to use goal-setting and decision-making skills to enhance health.	•	•		
Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.	•	•	•	

Grade 7	Activity 1	Activity 2	Activity 3	Poster
ENGLISH LANGUAGE ARTS				
Text Types and Purposes				
CCSS.ELA-Literacy.W.7.1: Write arguments to support claims with clear reasons and relevant evidence.		•	•	
CCSS.ELA-Literacy.W.7.2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	•	•	•	
CCSS.ELA-Literacy.W.7.3: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.				
Production and Distribution of Writing				
CCSS.ELA-Literacy.W.7.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	•	•	•	

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Common Core Standards for ELA, Health, & Consumer and Family Sciences

Grade 7 (cont.)	Activity 1	Activity 2	Activity 3	Poster
Conventions of Standard English				
CCSS.ELA-Literacy.L.7.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	●	●	●	
CCSS.ELA-Literacy.L.7.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling.	●	●	●	
CCSS.ELA-Literacy.L.7.3: Use knowledge of language and its conventions when writing, speaking, reading, or listening.	●	●	●	
Comprehension and Collaboration				
CCSS.ELA-Literacy.SL.7.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics and texts, building on others' ideas and expressing their own clearly.	●	●	●	
CONSUMER AND FAMILY SCIENCES				
3.4: Analyze resource consumption for conservation and waste management practices.		●	●	
5.1: Analyze career paths within the facilities management and maintenance areas.	●	●	●	
9.1: Analyze career paths within the food science, food technology, dietetics, and nutrition industries.	●	●	●	
9.5: Demonstrate use of science and technology advancements in food product development and marketing.	●	●	●	●
14.4: Evaluate factors that affect food safety from production through consumption.	●	●	●	
14.5: Evaluate the influence of science and technology on food, nutrition, and wellness.	●	●	●	
HEALTH				
Standard 1: Students will comprehend concepts related to health promotion and disease prevention.	●	●	●	●
Standard 3: Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.	●	●		
Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.	●			
Standard 6: Students will demonstrate the ability to use goal-setting and decision-making skills to enhance health.	●	●		
Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.	●	●	●	

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COW TO YOU:

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Common Core Standards for ELA, Health, & Consumer and Family Sciences

Grade 8	Activity 1	Activity 2	Activity 3	Poster
ENGLISH LANGUAGE ARTS				
Text Types and Purposes				
CCSS.ELA-Literacy.W.8.1: Write arguments to support claims with clear reasons and relevant evidence.		•	•	
CCSS.ELA-Literacy.W.8.2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	•	•	•	
CCSS.ELA-Literacy.W.8.3: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.				
Production and Distribution of Writing				
CCSS.ELA-Literacy.W.8.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	•	•	•	
Conventions of Standard English				
CCSS.ELA-Literacy.L.8.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	•	•	•	
CCSS.ELA-Literacy.L.8.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling.	•	•	•	
CCSS.ELA-Literacy.L.8.3: Use knowledge of language and its conventions when writing, speaking, reading, or listening.	•	•	•	
Comprehension and Collaboration				
CCSS.ELA-Literacy.SL.8.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics and texts, building on others' ideas and expressing their own clearly.	•	•	•	•
CONSUMER AND FAMILY SCIENCES				
3.4: Analyze resource consumption for conservation and waste management practices.		•	•	
5.1: Analyze career paths within the facilities management and maintenance areas.	•	•	•	
9.1: Analyze career paths within the food science, food technology, dietetics, and nutrition industries.	•	•	•	
9.5: Demonstrate use of science and technology advancements in food product development and marketing.	•	•	•	•
14.4: Evaluate factors that affect food safety from production through consumption.	•	•	•	
14.5: Evaluate the influence of science and technology on food, nutrition, and wellness.	•	•	•	

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COW TO YOU:

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Common Core Standards for ELA, Health, & Consumer and Family Sciences

Grade 8 (cont.)	Activity 1	Activity 2	Activity 3	Poster
HEALTH				
Standard 1: Students will comprehend concepts related to health promotion and disease prevention.	•	•	•	•
Standard 3: Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.	•	•		
Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.	•			
Standard 6: Students will demonstrate the ability to use goal-setting and decision-making skills to enhance health.	•	•		
Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.	•	•	•	

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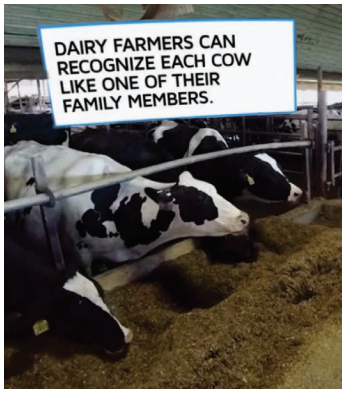
Activity 1

COWS COME FIRST!

REPRODUCIBLE MASTER

The delicious, nutritious milk you drink every day starts with cows raised on dairy farms near you. In the video, you heard Farmer Kati explain that cows are like a part of the family on her dairy farm, and that keeping them happy and healthy is the farmers' top priority.



Part 1:

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

1. Why is it important for cows to be healthy and happy?

2. What does Kati mean by a "cow salad"? Why do farmers feed cows these ingredients?

3. How does the cows' bedding help them stay comfortable?

4. How does the Gervais family protect their younger cows so they stay healthy?

Part 2:

Now that you have heard some of the ways cows are cared for, think about what in your own life keeps *you* happy and healthy. Then answer these questions.

1. What do you eat and drink that keeps you healthy?

2. What things in your life help you get a good night's sleep and how?

3. Who or what helps you figure out that you're staying healthy?

4. What is something you'd like to do more of to stay healthy?

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

Activity 2

A PIECE OF PLANET EARTH

REPRODUCIBLE MASTER

As you learned from Farmer Josh in the video, his dairy farm is committed to farming sustainably by helping keep the environment healthy. Who knew that cow manure was so good for the Earth? Think about everything you learned in the video (and on the web if you were able).

Part 1:

Now, write a letter to your local paper, mayor, or state representative, explaining some of the ways dairy farmers are creating sustainable farms. Include two or three examples of sustainable practices you've learned about, why they are important, and the benefits they produce for the farm and the community.

Part 2:

What do *you* do to help the environment? Describe three ways you and your family help the environment — or ways you've heard about that people can follow to help create a healthier, more sustainable Planet Earth.

1. _____

2. _____

3. _____

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Activity 3

CHANGING WAYS

REPRODUCIBLE MASTER

As you learned in the video, New England dairy farmers use different technologies and farming practices to achieve the same goals — high-quality cow care, producing nutritious milk, and taking top-notch care of the environment. Now think about the positive impact of this technology on the farmer's life, too.

Part 1:

We know that technology can improve our lives, but did you consider that farmers can use technology to bring wholesome, fresh milk to your table?

1. What is the most interesting thing you learned in the video?

_____

_____

_____

2. How do the technologies you saw in the video help improve the ability to manage a dairy farm? List and describe three of the technologies.

- _____

  _____
- _____

  _____
- _____

  _____

3. Think about a technology tool that *you* use that helps improve your life. How does it work for you?

_____

_____

_____

Part 2:

Now that you know how important technology is to dairy farms, create an idea for a brand-new invention to help benefit *your* life.

1. Name your invention: _____

_____

2. How does it work?

_____

_____

_____

_____

_____

3. What are the benefits? Why is it a good invention?

_____

_____

_____

_____

_____

4. On a separate sheet of paper, draw a picture of your invention. The picture should include the name of your invention as well as the key points you summarized above. Then share your invention with your group, vote on the most useful one, and present your group's favorite invention to the class.

NEW ENGLAND DAIRY & FOOD COUNCIL

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WELCOME TO DAIRY FARMS OF NEW ENGLAND

When you take a look around our dairy farms, you'll see how we use new technology, sustainable farming practices, and generations of dairy farming experience to ensure high-quality cow care, environmental stewardship, and availability of the fresh, wholesome, nutritious dairy products you enjoy every day.

24/7

Dairy cows depend on dairy farmers to take good care of them around the clock every day.

SWEET DREAMS

Cows spend 10-14 hours a day lying down, so they need a soft, comfortable resting place.

HEALTHY FOOD, HEALTHY COWS

Dairy cows eat about 100 pounds of feed and drink about 40 gallons of water every day.

ROBOTS TO THE RESCUE

Robots help out on dairy farms, from milking cows to pushing feed to collecting manure.

TRANSPONDER TRACKERS

Transponders help dairy farmers track their cows' health and well-being.

MANURE, A VALUABLE RESOURCE

Cow manure is a key ingredient for running a sustainable dairy farm.

COWS, NATURAL RECYCLERS!

Cows digest food that humans cannot, and then recycle it into the milk, yogurt, cheese, and ice cream that you enjoy!

A HEALTHIER PLANET

Sustainable farming and technology have reduced dairy farmers' impact on the environment.

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

NEW ENGLAND DAIRY & FOOD COUNCIL