



Lesson Plan

Dairy Farms

Created: 05/2016 by the National FFA Organization

STUDENT LEARNING OBJECTIVES

After completing these activities students will...

1. Identify and explain the process of making cheese.
2. Understand the purpose of an animal ultrasound.
3. Explain heritage farms.

TIME REQUIRED: 60 minutes

RESOURCES:

1. FFA.org
2. Video: *VetsOnCall-Where this pizza cheese comes from* <https://youtu.be/wL8LxSxkGEs>

EQUIPMENT AND SUPPLIES NEEDED:

1. A copy of the "Video Response" worksheet for each student.
2. A copy of the "Career Focus" worksheet for each student.
3. Internet access to play the video in real time or embed it in a PowerPoint ahead of time.

THIS QUICK LESSON PLAN WOULD WORK WELL AS A:

1. Stand alone activity for understanding advocacy and consumer audiences.
2. Portion of an agriscience lesson.

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

AFNR Performance Element

- CS.03. Examine and summarize the importance of health, safety and environmental management systems in AFNR workplaces.
- CS.06. Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources.

FFA Precept

- FFA.CS-M.Communication: Effectively interact with others in personal and professional settings.

Common Career Technical Core

- AG1 Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.
- AG2 Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food, and natural resources (AFNR) in society and the economy.
- AG6 Analyze the interaction among AFNR systems in the production, processing, and management of food, fiber, and fuel and the sustainable use of natural resources.

NASDCTEC

- AGC05.02 Identify how key organizational systems affect organizational performance and the quality of products and services to demonstrate an understanding of how AFNR systems are managed and improved.
- AGC10.03: Compare and contrast issues affecting the AFNR industry including biotechnology, employment, safety, environmental and animal welfare to demonstrate an understanding of the trends and issues important to careers in this industry.

Common Core- Writing

- CCSS.ELA-Literacy.W.9-10.1: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- CCSS.ELA-Literacy.W.9-10.2: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

Common Core- Speaking and Listening

- CCSS.ELA-Literacy.SL.9-10.2: Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

- CCSS.ELA-Literacy.SL9-10.1: initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led_ with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

Common Core- Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9.10.6: use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core- Math Practices

- CCSS.MP3: Construct viable arguments and critique the reasoning of others.
- CCSS.MP6: Attend to precision.

AFNR Career Ready Practices

- CRP.02: Apply appropriate academic and technical skills. Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive.
- CRP.04: Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written verbal and/or visual methods.
- CRP.05: Consider the environmental, social and economic impact of decisions. Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment.

Partnership for 21st Century Skills

- Communication
- Environmental Literacy
- Information, Communications, and Technology Literacy
- Initiative and Self-direction
- Leadership and Responsibility
- Environmental Literacy

LESSON PLAN:

1. Introduction:

As advocates for agriculture, part of our responsibility is helping consumers connect with agriculture, more specifically where our food comes from.

Bellwork Questions/Pre-Lesson Questions:

To introduce the students to the lesson for the day ask these two questions:

- 1) What do you think are two misconceptions about how our food is produced?
- 2) Why do you think there are many misconceptions in our society today in relation to food production?

2. Activity: Each student needs a copy of the handout "Video Response" worksheet.

- a. Show the video *VetsOnCall-Where this pizza cheese comes from*. The direct URL is <https://youtu.be/wL8LxSxkGEs>. The worksheet "Video Response" can be completed as the students watch the video. The last question will need to be researched online but the students can reference the video in their answer as well.
- b. The video discusses areas within agriculture that have jobs that students may be interested in after high school graduation or college graduation. For example, ultrasounds are performed on animals and that could be a potential career area for students. To connect with this part of the lesson each student needs a copy of the handout "Career Focus." Have students complete the worksheet following the directions listed on the handout. Students will need access to the internet to complete this handout.

3. Follow-up: At the conclusion of the lesson, students should reflect on the knowledge gained from the lesson.

- a. Follow-up activity: 3-2-1 Activity: Have students write on their own piece of paper 3 things they learned from the lesson, 2 things they found interesting and 1 question they still have about the lesson. Students can work individually on this or in pairs/groups. Have students share their responses.

4. Leveling Up:

- a. Have students create a "myth/fact" brochure about general misconceptions in agriculture.
 - b. Have students pick their favorite meal and research where each ingredient is produced and basic production processes for that ingredient. Students can work in partners or individually.
- After ample time is given for this assignment you can have students present their findings to the class.

NAME: _____

Video Response

DIRECTIONS:

Watch the video *VetsOnCall – Where this pizza cheese comes from*. Use this worksheet to answer questions as you follow along with the video.

1. What is the name of the plant that the milk is delivered to?

2. What percentage of the nation's milk goes into making cheese?

3. How big is Merry Water farms? (# of animals)

4. What task is performed by the veterinarian on his visit to Merry Water Farms?

5. What is the ultrasound used for?

6. What is the role of the veterinarian?

7. Research the process of making cheese. (What are the steps in this process). You can reference the video but will need to look up additional information online.

Aligned to the following standards:
CS.06;FFA.PL-A;FFA.PL-E.;FFA.CS-M;FFA.CS-N;AG1: AG2; AG6;
AGC05.02; CCSS.R19-10.1;CCSS.R19-10.2; CCSS.R19-
10.4;CCSS.W.9-10.2; CCSS.SL.9-10.4;CCSS.RST.9-10.9;
CRP.02;CRP.08

NAME: _____

Career Focus: Animal Ultrasound Technician

DIRECTIONS:

Research online the career of animal ultrasound technician and answer the following questions.

1.  What are the duties/responsibilities of this career?
2.  What are the educational requirements for this career?
3.  How much money does this career make?
4.  10 facts in general about this career:

Aligned to the following standards:
FFA.PL-A; FFA.CS-N; CCSS.R19-10.4; CCSS.MP6; HS-ETS1-3;
CRP.04; CRP.08

NAME: _____

Video Response – Answer Key

DIRECTIONS:

Watch the video *VetsOnCall – Where this pizza cheese comes from*. Use this worksheet to answer questions as you follow along with the video.

1. What is the name of the plant that the milk is delivered to?

A cheese plant named Grande Cheese.

2. What percentage of the nation's milk goes into making cheese?

80 percent

3. How big is Merry Water farms? (# of animals)

1300 dairy cows

4. What task is performed by the veterinarian on his visit to Merry Water Farms?

The veterinarian's main task is performing an ultrasound on the animals.

5. What is the ultrasound used for?

The ultrasound is used to see if the animal is pregnant and how many calves she is carrying.

6. What is the role of the veterinarian?

The overall role of the veterinarian is to check the health of the animal. Another main responsibility is to oversee the herd health.

7. Research the process of making cheese. (What are the steps in this process). You can reference the video but will need to look up additional information online.

(www.eatwisconsincheese.com)

- 1- Milk is tested for quality and purity. (It takes 10 lbs. of milk to make 1 lb. of cheese)
- 2- Standardization – Weigh, heat treat, or pasteurize the milk to ensure product safety and uniformity.
- 3- Starter culture and coagulant or good bacteria added to start the cheese making process.
- 4 – Cut into small pieces
- 5 – Stirring, heating, and draining – Cook and stir curds and whey until the desired temperature and firmness of the curd is achieved. The whey is then drained off.
- 6-Curd Transformation
- 7-Pressing –determines characteristic shape of cheese
- 8- Curing – depends on the variety and style of cheese.

Aligned to the following standards:

CS.06; FFA PL-A; FFA PL-E; FFA CS-M; FFA CS-N; AG1; AG2; AG6;
AGC05.02; CCSS.R.19-10.1; CCSS.R.19-10.2; CCSS.R.19-
10.4; CCSS.W.9-10.2; CCSS.SL.9-10.4; CCSS.RST.9-10.9;
CRR.02; CRR.08

NAME: _____

Career Focus: Animal Ultrasound Technician – Answer Key

DIRECTIONS:

Research online the career of animal ultrasound technician and answer the following questions.

1.



What are the duties/responsibilities of this career?

Some of the duties/responsibilities of this career include performing diagnostic ultrasound procedures on animals. Observe screen during scan to ensure satisfactory image for diagnostic purposes, making adjustments as required. Pro-actively monitor Oncura tele-medicine portal to ensure all of the images coming across are of diagnostic quality. Prepare and position patient for ultrasound exam and explain procedure. Communicate professionally and effectively with clients, teammates, and colleagues at all levels. Educate staff and veterinary on testing modalities, procedures, and processes. (<https://careers-analogic.icims.com/jobs/1177/veterinary-sonographer/job>)

2.



What are the educational requirements for this career?

Most animal ultrasound technician positions require formal training and graduation from an accredited school of medical ultrasound. Additionally, depending on the employer, 2-4 years ultrasound experience is required. (<https://careers-analogic.icims.com/jobs/1177/veterinary-sonographer/job>)

3.



How much money does this career make?

Salary ranges depending on the type of practice you are in and the area of the country. On average the salary is between \$45,000-\$88,000. (www.insidejobs.com)

4.



10 facts in general about this career:

1- Closely related to veterinary sonographer. 2- Licensing is under the jurisdiction of each state. (www.acvr.org) 3- Generally work 40 hours a week. However, may need to be on call or come in after hours for emergencies. (www.insidejobs.com) 4- Need good customer relation skills (www.recruiting.ultipro.com) 5- Need to understand hazards (radiation, biohazard waste, electromagnetic fields) (www.recruiting.ultipro.com) 6- Demonstrate flexibility in response to unexpected changes in work volumes or staffing needs. (www.recruiting.ultipro.com) 7- Performs daily safety, warm-up, and quality control checks for each ultrasound room/equipment. (www.recruiting.ultipro.com) 8- Able to recognize emergency situations and alert a veterinarian if needed. (www.recruiting.ultipro.com) 9- Understands hospital billing procedures. (www.recruiting.ultipro.com) 10- Maintains certification by recognized professional society. (www.recruiting.ultipro.com)

Aligned to the following standards:
NRS.01; AGPE01.01; CCSS.RI.9-10.3; CCSS.SL.9-10.1; RST.9.10.1; RST.9.10.2;
RST.9.10.4; RST.9.10.5; RST.9.10.6; RST.9.10.8; RST.9.10.9; WHST.9.10.7;
WHST.9.10.9; MP3; MP6; AG-NR2; HS-LS2-6; HS-LS2-7