



Lessons presented by  
**Oklahoma State University**  
 Ferguson Family Dairy Visitor Center  
 With Southwest-Southland Dairy Farmers

<b>Instructor</b>	Jaycie Heath
<b>Grade Level</b>	9-12
<b>Lesson Title</b>	Dairy Careers (Scheduled In Person)

### TEACHER PREPARATION

Learning Goals & Standards/Performance Indicators	
Learning Goals	Standards
1. Upon completion of this lesson students will understand and identify the role that various careers play within the dairy industry.	1. <u>AFNR FPP.01.01.01.a</u> Trace the steps milk undergoes when it leaves the dairy. 2. <u>Discuss the history of the dairy cattle industry and its role today</u> <ul style="list-style-type: none"> <li>• Environmental Science 3.1,3.2, 3.3, 5.1, 5.2</li> <li>• Grade 9: Language Arts 4.1.a, 4.2.c</li> <li>• AFNR AS.01.01.01.a</li> </ul>
Resources and Materials	
<input type="checkbox"/> <a href="#">National Ag in the Classroom</a> <input type="checkbox"/> <a href="#">Discover Dairy</a> <input type="checkbox"/> <a href="#">Study.com Job Descriptions</a> <input type="checkbox"/> <a href="#">Balance Careers- Dairy Inspector</a> <input type="checkbox"/> <a href="#">Balance Careers- Dairy Herdsman</a> <input type="checkbox"/> <a href="#">Agriculture Business Careers</a> <input type="checkbox"/> <a href="#">Linkedin- Dairy Public Relations Search</a> <input type="checkbox"/> <a href="#">Holstein Foundation Job Description</a> <input type="checkbox"/> Visuals in the center <input type="checkbox"/> Student tour guides	
Announcement and Other Preliminaries	
1. Welcome students to the Ferguson Family Dairy, introduce self and what you do for the dairy, etc.	

### LESSON DELIVERY

#### Anticipatory Set

- Show students to the viewing window.
- Ask them what tasks they think must be done each day to ensure the cows are taken care of (feeding, milking, cleaning, etc.) Ask them to brainstorm jobs related to each of the tasks they notice, and how those jobs may work together.
- Explain that your job is working here at the dairy and describe to students what a day in the life of a dairy employee looks like
  - There are about \_\_\_ student workers employed here at the dairy.
- Working in the dairy industry doesn't just have to be working with cows, there are

lots of different careers that influence how a dairy operates and today we are going to learn about a few of the main careers that keep dairies running.

## Direct Instruction

**1<sup>st</sup> Learning Goal:** Upon completion of this lesson students will understand and identify the role that various careers play within the dairy industry.

Content Outline	Instructional Strategies
<p><u>Dairy Herdsman</u></p> <ul style="list-style-type: none"> <li>• A dairy herdsman is an employee at a dairy who works with the cows every day to:               <ul style="list-style-type: none"> <li>○ Maintain cow health.</li> <li>○ Ensure cows get feed and water.</li> <li>○ Milk the cows (some larger dairies have people who ONLY milk the cows, in those situations a dairy herdsman may not milk)</li> <li>○ Keep record of the cows' health.                   <ul style="list-style-type: none"> <li>▪ Today our record keeping is aided by technology, like special tags that record when cows go to the feeder or when they go into the robotic milker.</li> </ul> </li> <li>○ Maintain udder health/cleanliness before and after the cows are milked.</li> </ul> </li> <li>• May also: treat minor injuries, give vaccination shots, trim hooves, or help with calving.</li> <li>• These people work with the cows the most, as they see them every day. It is their job to ensure all the cows are in good health, they don't have any infections/illnesses that could contaminate the milk and ensure that milk production quotas are met.</li> </ul> <p><u>Veterinarian</u></p> <ul style="list-style-type: none"> <li>• Doctors for animals</li> <li>• Responsible for giving the animals regular medical care:               <ul style="list-style-type: none"> <li>○ Treat illnesses.</li> <li>○ Prescribe medicine.</li> <li>○ Perform surgery.</li> <li>○ Provide regular health checks.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• It would be good to have images or prerecorded video of people performing each job.</li> <li>• Could also have tools, feedstuffs, example medications, etc. For students to view and associate with each career.</li> </ul>

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- Work with the herdsmen and dairy owners to create health protocols that include vaccinations and regular deworming.
- These people may work with one farm or many farms within an area. Veterinarians who work with one farm are highly specialized to treat the animals there and recognize signs of discomfort or distress within the animals at that dairy. Many large dairies have veterinarians on staff in case of emergencies and to help maintain animal health at all times.
- They may also specialize in large animals (beef and dairy cows, horses, etc.) or they may work with large and small animals (dogs, cats, etc.)

#### Nutritionist

- They make different feeding programs for each stage of the dairy cow's life by working with the herdsmen at the dairy to determine the cows' nutritional needs.
  - *Point out to students that just like how adults eat differently than they do, adult cattle eat differently than calves.*
  - They must know all about different kinds of feed and how different breeds of cattle will respond to those types of feed.
    - *Point out that we have Holsteins and Jerseys and how each breed has different nutrient requirements due to size, milk production rates, etc.*
  - Nutritionists must know how much protein, carbohydrates, vitamins, and minerals cows need at different stages of their life. They use this knowledge and the knowledge they have of various types of feed to create feeding plans for the cows.

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- They may work for one farm or many, their job is to take information provided by farm owners or herdsman and create the best possible feed program.
- These people do not have to work as closely with the cows as Veterinarians or Herdsman. Their primary role is observing how the cows perform when fed the rations they created. Some of this observation may even be done by the herdsman so the nutritionist doesn't have to work directly with the cows.

#### Equipment Service Technician

- It is their job to maintain, upgrade and fix equipment used in the dairy industry. This includes:
  - Cleaning internal parts of machines
  - Repairing milkers
  - Checking to make sure the equipment is running like it should.
  - Helping to install new equipment or upgrade what is already there.
- Rarely do these people work with the cows directly, it is their job to make sure equipment is taken care of, not that the cows are.

#### Safety Inspector

- Their job is to prevent harm to workers, property, the environment, and the general public who may visit the farm.
  - This may include:
    - Posting signs to warn the public about the dangers of being around livestock.
    - Checking for broken fence lines or gates.
    - Making sure floors aren't slick and/or there aren't trip hazards.

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- Safety inspectors may also make sure the dairy products we consume are safe and healthy to eat.
  - They may do this by:
    - Checking milk tank storage temperatures.
    - Making sure udders are being cleaned before milking.
    - Ensuring safe handling of milk
- These people do not have to work as closely with the cows as Veterinarians or Herdsmen. Their primary role is ensuring safety protocols are in place around the farm. They are generally employed by larger dairies to ensure the dairy can pass inspection by dairy inspectors and maintain their production license.

#### Dairy inspector

- Inspect dairy farms to ensure that they adhere to various regulatory and food safety requirements. This includes:
  - collecting samples to take them to the lab for testing
  - Issuing licenses to milk producers
  - Documenting violations and issuing fines
  - Giving recommendations to facility managers to improve biosecurity and reduce the incidence of disease
  - Compiling comprehensive reports that detail the conditions at dairy facilities.
  - Checking the cleanliness of the milking parlor equipment
  - Examining the health of the dairy herd
- Dairy inspectors review the entire facility during their visit and are often employed by state or national governments.
- They don't work very closely with the cattle, instead they make observations of the cattle and the farm environment during their visits.

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### Milk Inspector

- Their job is to inspect milk, processing equipment, and facilities. They may do this by:
  - Checking milk storage temperature
  - Checking milk tank cleanliness
  - Checking tanker trucks for cleanliness and appropriate storage temperature.
- They ensure compliance with regulations and laws governing health, quality, and safety.
- Like dairy inspectors, milk inspectors may be employed by the state or national government. However, processing plants or milk distributors may also employ milk inspectors to ensure the product they receive is of good quality.
- They don't work closely with the cattle, instead they work closely with the milk after the cow has been milked to ensure its safe for consumption.

### Public Relations Manager

- People who work in public relations manage social media accounts (like Facebook or Instagram), work with people who visit the dairy, and sometimes they even help with planning the best ways to sell products.
- Their job is to promote the dairy and encourage people to visit or buy products from the dairy.
- These people don't work with the cows, instead they work with the people who work with the cows.

### Marketing Manager

- A marketing manager may work very closely with a public relations manager, as both of their roles involve the public.
- Their main duties include:
  - Advertising

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- Promote and sell milk to distributors and processing plants.
- Promote the dairy to the public.
- If the dairy has a visitor center, they will create advertising and promotional materials for this as well.
- Like the public relations manager, these people don't work with the cows, they work to bring people to see the cows or to sell the products the cows make.

#### Breed Association Representative

- A breed association representative presents, sells and supports products and services for dairy farmers and businesses.
- They contact potential buyers, present products and services, answer questions and discuss pricing.
- They work from an office but travel across the country to do what it takes to keep the breed progressing and build customer satisfaction with the services offered by the breed association to help dairy farmers succeed.
- Their role is to promote the specific breed they represent to various dairymen and women across the country. So, they don't work closely with the cattle, they work with the people who own the cattle or may be interested in owning cattle.

#### Accountant

- Like an accountant for any business, accountants at dairies keep records of business-related financial transactions.
- They record business expenses and calculate the profit earned. They also make sure taxes are being paid and employees receive their pay.
- Some expenses they may track include:
  - Feed bills

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- Veterinary/Medication Costs
- Payroll for employees
- Equipment maintenance
- Some of their income tracking may include:
  - Milk selling contracts.
  - Selling of cows or calves
  - Selling milk products (cheese, ice cream, etc.)
- Without accountants, larger dairies may not be able to keep track of their expenses or remember to pay their employees, so while accounts don't work with the cows at all they are vital to dairy operations.

#### **Learning Activity**

- Students should be provided a notes sheet with blanks below each career title to fill in with notes about the career.

#### **Assessment**

- Students should be asked to select the career they are most interested in, share their interest with a partner, then they should be asked to share what their partner said to the rest of the group. As they do ask questions like:
  - What do you think makes that career interesting to your partner, why was this not the career you selected?
  - What do you think would be one challenge of that career?

### **Closure**

#### **Closing Announcements/Reminders**

- Answer any questions they may have
- Show them the robot and viewing windows one more time
- Thank students for coming to the Ferguson Family Dairy