



Myths about food production

Middle School Food and Agricultural Literacy Curriculum

Precepts

D. Character

D1. Live with integrity

National Standards

CS.01.04.01.c. Perform tasks with integrity.

AS.06.01.01.b. Outline safety procedures for working with animals by species.

FPP.01.02.02.b. Discuss the application of industry standards in the food products and processing industry.

NL-ENG.K-12.12 – Applying Language Skills

NS.5-8.5 – Science and Technology

NS.5-8.6 – Science in Personal and Social Perspectives

NSS-EC.4-8.8 – Supply and Demand

Student Learning Objectives

As a result of this **unit** students will...

Analyze common agriculture perceptions.

As a result of this **lesson** the student will...

Describe the rationale behind standard agriculture industry practice.

Content Outline

I Standard agriculture industry practices.

- Why do we keep sows in a stall?
- Why do we keep chickens in cages?
- Why do we dehorn cattle?
- Why do we brand cattle?
- Why do we castrate livestock?
- Why do we produce animals on large-scaled operations?
- Why do farmers use chemicals on food?

Time

Instruction time for this lesson: 45 minutes.

Resources

Lee, Hunter, Rudd, Westrom, Patrick and Bull. (2004).

Introduction to livestock and companion animals. Upper Saddle River, New Jersey: Prentice Hall Interstate.

Lee, J., and Turner, L. (2006). Agriscience. Upper Saddle River, New Jersey: Prentice Hall Interstate.

Farm Bureau. (2009). Do we still have family farms? Food and farm facts, 7.

National FFA Organization. (2003). LifeKnowledge Precepts and Signs of Success.

Tools, Equipment, and Supplies

MS.IAS.5.3.TM.A – one per teacher

MS.IAS.5.3.TM.B – one per teacher

MS.IAS.5.3.TM.C – one per teacher

MS.IAS.5.3.TM.D – one per teacher

MS.IAS.5.3.TM.E – one per teacher

MS.IAS.5.3.TM.F – one per teacher

MS.IAS.5.3.TM.G – one per teacher

Markers – for each of the seven groups

7 pieces of large poster paper

MS.IAS.5.3.ASSESS.A – one per student

Key Terms

The following terms are presented in this lesson and appear in **bold italics**:

Sows

Dehorn

Castrate

Branding

Interest Approach

Talk students through a visualization of eating at McDonalds and their food not being consistent. Ask them how they would react.

Imagine that today we are taking a trip to our local McDonalds to eat our favorite meals! Close your eyes and picture your favorite McDonalds food in front of you. You are getting ready to take a bite, but you notice something is a little weird about this McDonalds food. It looks a little different today. Maybe it is bigger, smaller, or even a different color. You decide you want to eat it anyway. You take your first bite, but you have to spit it out because it tastes different too!



Lesson Number: MS.IAS.5.3

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Introduce students to the topic that there are many practices that we do in the agriculture industry that help us in being more efficient and consistent in the products we deliver to consumers. Help students process the visualization with a series of questions.

Now, this probably hasn't happened to us, but how would you feel if you walked into a McDonalds and this did happen to you?

Expected responses: disappointed, and probably wouldn't want to eat there again.

Why do you think that this doesn't normally happen to us as consumers?

Process until they talk about how they want things to be the same each time they buy a food product, clothing, or even a car.

What do you think McDonalds does to make sure it is the same hamburger every time?

Answers will vary. Make sure they know that companies that make products follow certain procedures to make sure they are the same for consumers.

Before we move on, let's talk about where we can apply this philosophy of consistency in our own lives. Where or when is it important that our actions in life measure up to who we say we are?

Look for answers such as when we keep promises to people, or when we treat others with respect. Students may also talk about integrity. Lead students to the conclusion that in no matter what situation they find themselves in, they should try to remain consistent in their integrity and remain who they are as a person.

We just looked at a few things that McDonalds does to give us the same fast food that we want every day. Today we are going to explore some of the common procedures that the agriculture industry does to make sure we get the same food on our table each and every day.

Summary of Content and Teaching Strategies

Objective 1. Describe the rationale behind standard agriculture industry practices.

Students will use the Go Get It e-Moment® to receive the information on some standard agriculture industry practices. Post **MS.IAS.5.3.TM.A** through **MS.IAS.5.3.TM.G** around the room in various locations.

There are a total of seven examples, and therefore divide the class into partners or even small groups before students use the Go Get It e-Moment. The standard agriculture practices they will read about are as follows:

- Why do we keep sows in a stall?
- Why do we keep chickens in cages?
- Why do we dehorn cattle?
- Why do we brand cattle?
- Why do we castrate livestock?
- Why do we produce animals on large-scaled operations?
- Why do farmers use chemicals on food?

Around the room we have some interesting practices that are used in the agriculture industry. When you hear MCDONALDS, select one of these practices from the around the room and race back to your seats. We will have 30.5 seconds to complete our task. What questions are there? MCDONALDS!

Play some up-tempo music as students select their practice. After students get their material, transition into having them read the information.

Awesome! It looks like we have completed the first step. Hold up the information you just gathered. We will find some pretty interesting information on these sheets of paper. Some of these practices we may have questions about. With our groups, let's read this information out loud in the next few minutes.



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Hold those papers back up! Now pick anyone in your group and hand them the information. Great, this person is now the reader! Take the next few moments to read this paper to your group. When you finish reading, as a group decide the five most important facts you have learned from the reading and underline those facts. What is step one? Read, right! Step two? Underline five facts—correct! You may begin!

Allow students plenty of time to read and underline. After it seems that most groups have reached a good point to give further directions, give students the next set of directions to begin designing a poster and presentation to share with the class. The directions for what to include on the poster are also on all the information sheets.

Many of us have probably noticed from our reading that we will be creating a poster and then presenting that poster to the class. When we hear the word GO, gather up all necessary supplies for creating these posters. You will need markers and these large sheets of paper found at the front of the room. If you forget what needs to be included on your poster, just look at your information sheet. Everyone, hold up your pens. Good, now circle the directions for your poster on your group's reading materials. Great! Let's gather up supplies and GO!

Give students approximately 7-10 minutes to complete their posters. Remind students that everyone must be involved in presenting their poster to the class. So if they finish a little early, they can assign who is sharing what.

By looking around the room it appears we have some great posters to share! Who will go first?

After each group is done sharing their poster, provide them with tape to post their poster somewhere on the wall. Later, these posters will be used for a gallery walk. After each group has finished sharing, provide a transition into the review.

Earlier we talked about how we as consumers enjoy a food supply that is consistent. We did this with our trip to McDonalds. Then we just heard all about some things that the agriculture industry does to create consistency and efficiency in producing our food. Keep these things in mind as we begin our review.

Review/Summary

Students will be taking a gallery walk of the posters they created. If desired, have them take a writing utensil and a note card or piece of paper with them to capture some key information from the posters.

We are about to embark on a walk through our art gallery! For this walk you will need two things: a writing utensil and a piece of paper.

When you hear the word REVIEW, take a leisurely stroll through our gallery of agriculture posters. On your paper write down one important fact from each poster you visit. How many facts? One from each poster, right? That makes a total of seven facts. Questions? REVIEW!

You may ask students to turn in their papers or have them share their facts with other students in the class. If you have them share, make a rule that they cannot share the same fact twice and that they have to share facts with several different students.



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Application

Extended classroom activity:

Have students research on the Internet more about the topics. Have the groups provide five reasons the practices are positive and five reasons why they may not be positive.

FFA activity:

Set up a class debate utilizing parliamentary procedure and the above extended classroom activity.

SAE activity:

Have students design an experiment to test one of these practices. A suggestion would be the use of fertilizer when growing tomatoes or bedding plants.

Evaluation

Give students MS.IAS.5.3.ASSSES.A

Answers to Evaluation

1. family farm operations
2. castration
3. horns; calves
4. pig
5. stalls
6. branding



Why do we keep pigs in stalls?

Some may believe that keeping animals in a cage, stall, or other confined space is cruel. Let's take a look at this standard industry practice to understand some reasons that farmers keep gilts and sows in stalls.

One practice that some farmers may implement is placing pregnant gilts or sows in stalls. There are many benefits of using stalls. First, there is much less labor involved in caring for the pig. It provides a much safer environment for a handler working with the animal in the event that she needs medical treatment. Also, farmers are able to control the temperature in the stalls by using heated mats or heating lamps for newborn piglets. Finally, they can help control the problem of sows crushing piglets when the sow rolls over because the stalls have areas separated by bars to provide piglets their own area.

As a group you are to create a poster and presentation on the above information. Your posters must include the following:

- *A title for your poster*
- *One image or picture on your poster*
- *Five important pieces of information about your topic*
- *Whether or not you agree or disagree with the standard agriculture practice*
- *Everyone needs to take part in presenting your poster to the class.*





Why do we keep chickens in cages?

Some may believe that keeping animals in a cage, crate, or other confined space is cruel. Let's take a look at this standard industry practice to see some reason that farmers keep chickens in cages.

Chicken is a very common meat that consumers enjoy each year. On average, each person in the United States will eat over 75 pounds of chicken each year. We also use chickens for their eggs, feathers, and even medicines. The demand for chickens and their products is high. Therefore, the chicken industry needed to create a way to safely and humanely produce enough chickens to meet the demands of consumers.

One of those ways is keeping layers (hens that lay eggs) in cages. Broiler chickens, or those grown for meat, are kept in environmentally controlled buildings but not in cages. The hens that lay the eggs are kept in cages for many reasons. First, it makes collecting those eggs much easier. Most producers use an automatic egg-collecting system that reduces labor. This is also helpful to make sure that the eggs do not get damaged or cracked by the hens. Automated feeding and watering systems are also easily used with these layers. These specially designed cages help one hen produce around 300 eggs each year.

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Why do we dehorn cattle?

Many people believe that some of the practices that farmers use with their animals are inhumane. Let's take a look at the standard industry practice to see some reasons that producers dehorn their cattle.

Beef is a very common meat that consumers enjoy each year. On average, each person in the United States will eat over 65 pounds of beef each year. There are other products we get from cattle such as using their hides for leather and even their hair in paintbrushes. Producers help get these products to us by performing standard industry practices on their cattle.

One practice that beef producers perform on their cattle is dehorning. Some breeds of cattle have horns and dehorning is the removal of those horns. The main reason this is done is to prevent the cattle from hurting other cattle with their horns. It is also much safer for people to work with these cattle if they do not have to worry about being injured by horns.

Usually the process is performed on young calves because it can be traumatic to the animal if performed on an animal that is too old. The process is simple. A producer will place a caustic chemical on the area where the horns grow. This chemical prevents the tissue from growing. Other times the horns are sawed or clipped off.

As a group you are to create a poster and presentation on the above information. Your posters must include the following:

- **A title for your poster**
- **One image or picture on your poster**
- **Five important pieces of information about your topic**
- **Whether or not you agree or disagree with the standard agriculture practice**
- **Everyone needs to take part in presenting your poster to the class.**



Photo credit: © State of New South Wales through Industry & Investment NSW



Why do we brand cattle?

Many people believe that some of the practices that farmers use with their animals are inhumane. Let's take a look at the standard industry practice to see some reasons that producers brand their cattle.

Beef is a very common meat that consumers enjoy each year. On average, each person in the United States will eat over 65 pounds of beef each year. There are other products we utilize from cattle, such as using their hides for leather and hair in paintbrushes. Producers help get these products to us by performing standard industry practices on their cattle.

One practice that beef producers perform on their cattle is branding. This is done mainly to help identify their cattle and claim ownership over their cattle. Each producer selects a unique brand and then has it registered with a state agency. Since no two brands are alike, it makes it very simple to identify the owner of the cattle.

There are two methods that are commonly used. They are hot iron and freeze branding. The hot iron method burns the skin and doesn't allow hair to grow back. However, the freeze branding uses liquid nitrogen and does allow the hair to grow back. The liquid nitrogen causes loss in skin pigmentation and therefore the hair grows back white.

As a group you are to create a poster and presentation on the above information. Your posters must include the following:

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Why do we castrate livestock animals?

Many people believe that some of the practices that farmers use with their animals are inhumane. Let's take a look at the standard industry practice to see some reasons that producers castrate livestock such as sheep, cattle, and swine.

Castration is removing the genitals from a male animal. In cattle, a castrated animal is called a steer, in swine this animal is called a barrow, and in sheep this animal is called a wether. There are many reasons we castrate livestock. One reason is because male livestock can become aggressive. Castrated animals much easier to handle. Also, the meat from castrated animals is more valuable than from an animal that was intact. This is because it is typically more tender. Lastly, castrating is done to control animal breeding within the herd. This controls unwanted pregnancies in the herd.

Castration can be done using surgical or non-surgical methods and both practices are common in the industry. Surgical castration involves using a scalpel to cut the animal and remove the genitals immediately. With this method, there is a need to make sure the bleeding is stopped and that flies do not irritate the cuts. Non-surgical castration uses an elastrator and elastic band that cuts off circulation to the genitals, causing them to fall off after a certain amount of time has passed. Both methods are done with the animal and herd's health in mind, minimizing potential infection.

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- **Five important pieces of information about your topic**
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Why do we produce animals on large-scaled operations?

Many people believe that the family farm has disappeared! This is simply untrue. The truth is that the family farm has grown larger in order to produce food to feed the growing population, and that 98% of all farms are still family owned. To add to this, 82% of all agriculture products sold comes from these family farms.

Why do we produce animals on large-scaled operations? They are designed to help the farmer produce livestock more efficiently. This means fewer people are needed to feed and manage these animals without sacrificing proper care and attention to each animal on a daily basis. Many large-scaled operations take advantage of automatic feeding and watering. Even given the efficiencies gained by large-scale production, a farm isn't like an assembly line. Each animal is different and requires individual care from time to time. These farms employ many people who care about producing food. Also, environmental factors, such as temperature and humidity, can be controlled more easily. These operations are designed so that the animals are as comfortable as possible, and therefore, as profitable as possible. Without these larger-scaled operations it might not be possible to produce enough products to meet consumer demand. Also, the prices of many products would increase since less food would be available. Lastly, the consistency and quality of products could be negatively affected.

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Why do farmers use chemicals on food?

Many people believe that using chemicals on our food supply is wrong and harmful in many ways. Although there are some downfalls to using pesticides and other chemicals, consumers should not be worried about being harmed if these chemicals are used properly.

There are many advantages to using chemicals. They help eliminate pests, such as weeds, insects, and diseases. They can also provide nutrients that our crops need, in the form of fertilizers. To add to this, they make it possible to produce higher quantities of food for consumers.

There are government agencies, such as the Environmental Protection Agency (EPA), that help make sure that only approved chemicals are used on our food. This helps ensure that chemicals do not contaminate our environment or harm people who eat the food. Chemicals make it possible for you to enjoy food that is good for your body and free of unwanted pests or diseases.

As a group you are to create a poster and presentation on the above information. Your posters must include the following:

- **A title for your poster**
- **One image or picture on your poster**
- **Five important pieces of information about your topic**
- **Whether or not you agree or disagree with the standard agriculture practice**
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Fill-in-the-Blank

Name _____

Directions: Using the word bank provided, write in the correct term to complete the sentence.

1. Ninety-eight percent of all farms are _____.
2. _____ means to remove the genitals from a male animal.
3. Dehorning removes the _____ from _____.
4. A sow is a female _____ that has reproduced.
5. _____ allow gilts and sows to be housed in an environmentally controlled, easily managed area.
6. _____ is a way to identify animals.

Word Bank:
branding
calves
castration
stalls
family farm operations
horns
pig