

ELEMENTARY
CURRICULUM

MEET THE **MEAT**



OVERVIEW

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Overview

The USDA recommends a quarter plate of protein in their MyPlate program. Complex protein found in meat fulfills part of that recommendation. Understanding the beef industry provides students with science-based information they can use in making decisions about their protein choices in building a healthy diet.

Let's Meet the Meat

I. Enduring Knowledge:

Students will understand the role of good nutrition, including proteins found in animal products such as beef, in their lives.

Learning Targets:

1. Lean beef is an important source of food for the world population.
2. Beef keeps our bodies healthy, allows our brains to think and gives us energy.
3. Most people involved in the beef industry respect the animal and the safety of providing beef.
4. There are many occupations involved in the beef industry.

Vocabulary:

1. **food chain:** feeding relationships among living things, a hierarchy of different living things
2. **omnivores:** a classification of animals that eat both plants and animals
3. **grass-finished beef:** cattle that are raised on pastures their entire lives
4. **grain-fed beef:** cattle that are fed a mixture of grass and grains
5. **certified organic beef:** cattle that are fed 100 percent organic feed, and may not be given hormones or antibiotics
6. **natural beef:** a classification of beef that can't have any artificial flavoring, coloring or chemical preservatives; natural beef can be grain fed, grass-finished or organic as long as it's minimally processed and doesn't contain additives
7. **cow-calf operation:** Beef production begins with farmers who maintain a breeding herd of cows that nurture calves every year. When a calf is born, it weighs 60 to 100 pounds. Over the next few months, each calf will live off its mother's milk and graze grass in pasture.
8. **weaning:** beef calves are weaned (meaning they start to eat solid foods in addition to their mother's milk) at six to ten months of age when they weigh between 450 and 700 pounds. These calves are now grass-fed in pasture.

- 9. stockers and backgrounders:** After weaning, cattle continue to grow and thrive by grazing during the stocker and backgrounder phase. Cattle spend about 3-9 months grazing on many different kinds of pasture and, in effect, convert forage and grass into protein products for people.
- 10. feedyard:** The next step in beef production is when mature calves are moved to feedyards (also called feedlots). Here, they typically spend 4-6 months, during which time they have constant access to water, room to move around, and are free to graze at feed bunks containing a carefully balanced diet. Veterinarians, nutritionists and cattlemen work together to look after each animal.
- 11. ruminant animals:** a classification of hooved animals that share a unique digestive system that allows them to break down grass and hay as sources of food.

II. Teacher Background Material:

- Lean beef is an excellent source of naturally occurring essential nutrients that are important to the development of both our brains and our bodies.
- Beef contains zinc, iron and protein. Zinc helps power your brain and helps your body heal. Iron helps carry the oxygen in your blood and protein supplies energy for your body, and keeps you strong by building and maintaining muscle throughout your body.
- Beef is also an excellent or good source of other essential nutrients such as selenium, vitamins B12 and B6, niacin, phosphorus and riboflavin.
- Eating smart means choosing a diet that includes a variety of food groups such as whole grains, fruits, vegetables, dairy and lean proteins.
- Wisconsin is known as the “Home of the Hamburger.”
- There are many different breeds of beef cattle such as Hereford, Angus, Charolais, Limousin, Simmental and others. The various breeds of beef differ in taste, texture and tenderness.
- The ways animals are raised and fed contribute to the difference in tenderness, taste and texture.
- There are many different stages of beef production, each serving a unique role in the process. In some cases the animal is raised from birth to sale on the farm. In other cases, animals are raised on the farm part of their lives and then are shipped to feedyards where they are fed to full growth.
- Beef is processed into many different cuts: steaks, hamburger, roasts, and more.

10. Important facts about cattle include:

- Christopher Columbus introduced cattle to the Western Hemisphere on his second voyage to the New World.
- Cattle recycle by eating by-products, such as fruit pits, potato peels, etc. and this helps cut back on the amount of waste that goes into our nation's landfill.
- Cows are firefighters because they keep the grass short, and this reduces the spread of fires.
- Fats or protein from cows can be used to create hundreds of by-products.
- Cowhide provides us with leather for clothing, shoes, boots, etc.

11. There are many jobs in the beef and cattle industry:

- cattle farmers and ranchers
- feedyard caretakers
- veterinarians
- packing plant and processing employees
- scientists such as geneticists, animal nutritionists, meat scientists
- USDA inspectors
- bankers
- chefs
- butchers

III. Before Viewing the Video:

Have students discuss what they know about where beef comes from and if they are aware of the different kinds of beef. Make a list of class knowledge to compare after students watch the video.

IV. Viewing Guide:

This video can be used in many areas of the curriculum. Students can watch for information in the following areas:

Health Curriculum:

1. In the area of health, students can learn about how meat affects their bodies.
2. Have students discuss what they know about healthy eating habits. Refer them to the MyPlate information (cf. MyPlate.gov) and ask them what specific foods they think comprise each category of healthy food.
3. Students can learn about what processes are in place to make sure the food supply is safe and healthy.

Agricultural Curriculum:

1. Students can understand how products made from beef animals are made available for use by people.
2. Learners will become aware of the science behind the raising of cattle.
3. The video will discuss the different careers related to production and distribution of food to a local community.

Business Management and Marketing:

1. This video shows how change occurs when beef moves from production to consumption.
2. Students will learn about occupations that are needed to grow and provide beef to the consumer.

Technology:

1. Students discuss the technology that is used in the production of beef.
2. The video will explain different technology occupations that are used in beef production.

Agriscience/production:

1. Students will identify different types of beef cattle raised for food consumption.
2. Students will learn the history of beef production.
3. The video explains the importance of safe practices in the beef industry.
4. Many careers are identified in the area of beef production.

Ecology/Environment:

1. The video identifies different breeds and uses of cattle. It discusses how we benefit from them.
2. Students learn how cattle are part of the ecosystem and how they help protect our environment.
3. Students will learn how farmers and ranchers that raise beef use science to engage in environmental stewardship practices to better manage natural resources.
4. As active learners, students will become aware of how the modern techniques of raising beef cattle are an important part of the environment.

V. Discussion Guide:

1. Have students go back to their original ideas in the prior knowledge section and have them discuss what they thought they knew and what they added to their knowledge.
2. Using the questions from the appropriate emphasis the teacher has chosen above, conduct a class discussion around the various points raised by the class.

VI. Evaluation:

Teachers can do an informal assessment of students understanding in class discussion using the Learning Targets.

The Extended Learning activities allow teachers to assess students on their ability to gather information from the video and to increase that information by reading, using technology and interviewing people. Students should be able to demonstrate this expanded knowledge in one or more of the following ways: verbal, written, and visual representations.

VII. Suggestions for Extended Learning:

Some suggestions for expanding this curriculum for students with different learning styles or for more in-depth study follow:

1. Have the students make a drawing of the components of a healthy diet. The new USDA guidelines are in a circle, as a plate, rather than the traditional pyramid. They could set goals for healthy eating and keep track of their success through technology.
2. Students could compare the different ways cattle are raised (conventional/grain finished, grass-finished, certified organic). Using this information a student could analyze how the different methods of raising cattle may have both good and bad results.
3. Students could use technology, reading materials, etc., to create a research project:
 - One paper could look up important historical information on the cattle industry.
 - Students could research how science and technology is used in developing a variety of foods; meat, grains, farming techniques, etc.
 - Students could research how beef is processed on a large scale and compare it with methods used on small farms today and in the past.
 - Students could research how technology has changed the food industry.
 - Students could do a timeline on cattle production from Columbus' time to today.
 - Advanced students could research the study of genetics as it relates to beef production.
4. Students could interview people who work in various facets of beef production, such as, farmers, veterinarians, food processors, grocers, etc. In their interviews some of the following questions could be asked:
 - What people like about their jobs?
 - What is the hard part of their job?
 - What type of education did they need for this job?
 - What are some food safety issues they need to be aware of when doing their job?
 - What are some personal safety issues they need to be aware of when doing their job?
 - How does their part in the process affect the quality of the end product?

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Interviews could be made into a video. Students could develop a talk show or some other skit, where people could dress up as their person and be interviewed on the job.

5. Students could develop projects that visually teach important ideas conveyed in the video:
 - They could visually tell the story of how beef is safely processed.
 - Students could show how food helps our bodies stay healthy.
 - The student could visually present the different careers that are involved in the beef industry.
 - Students could do a collage to show the different food groups and how they affect the body.
6. Students who have distinct learning styles that make it more difficult to show understanding in typical ways could do some of the following:
 - Watch a video about food production and draw pictures to share with the class.
 - Make a cookbook of healthy foods that students could make for themselves.
 - Make a detailed drawing of MyPlate including pictures of the foods suggested.
 - Write some commercials for various types of healthy foods that you like to eat and present them to the class.

Wisconsin Teacher Standards which can be met with this curriculum, including rationale.

Standard 1: Subject matter.

This curriculum provides information not readily available in other forms. A teacher using this material will be well-informed about the subject matter.

Standard 2: Broad range of ability.

This curriculum provides instruction that supports their intellectual, social, and personal development.

Standard 3: Adapt instruction.

This curriculum provides suggestions for learners with a variety of intelligences and levels of ability.

Standard 4: Instructional strategies.

This curriculum includes the use of technology to gain information and suggestion for using research in extending learning.

Standard 5: Individual and group motivation.

Both prior knowledge and group projects promote motivation for students to learn.

Standard 6: Verbal and nonverbal communications.

Instruction media and technology that promotes active learning are key parts of this curriculum.

Standard 7: Organizes and plans systematic instruction.

This curriculum is organized to support teacher knowledge, to draw on and motivate students to engage in active learning, and promotes active inquiry, collaboration, and supportive interaction in the classroom.

Standard 8: Formal and informal assessments.

Suggestions for a variety of assessments, both formal and informal, are offered in the curriculum.

The following Wisconsin Proficiency Standards are addressed by the elementary curricula for *Meet the Meat*.

A. GLOBAL AGRICULTURAL SYSTEMS

Content Standard

Students will learn about the role of food, fiber, and natural resource systems in their lives and the lives of others around the world.

Rationale

Knowledge of global agricultural systems and the natural resources required to produce food and fiber used in daily life leads students to understand the relationship between production and sustainability. Understanding food and fiber production, distribution, and consumption at local, national, and international levels allows students to comprehend the complex interdependence that exists within agriculture.

4th Grade: A.4.1

B. TECHNOLOGY/INFORMATION

Content Standard

Students will demonstrate the ability to access information from multiple sources, synthesize the information, and use it for the technological improvement and stewardship of food, fiber, and natural resource systems.

Rationale

The use of technology for gathering information and producing products within the food, fiber, and natural resource industries is essential in the global marketplace. Producers, processors, manufacturers, and researchers who utilize technology will be able to compete better in the global marketplace. Students must realize that using technology and understanding its potential are lifelong skills necessary for employment and existence in society.

4th Grade: B.4.2 (see LA A.4.4, E.4.1; SC A.4.3)

D. AGRISCIENCE/PRODUCTION

Content Standard

Students will demonstrate an understanding of the scientific principles and societal implications involved in the production and processing of food and fiber as well as an understanding of basic animal husbandry and sustainable agricultural practices.

Rationale

Students need an understanding of the scientific principles underlying the production of food, fiber, and sustainable agriculture, and the relationship that this has to their daily lives. Knowledge of the concepts of agri-science production and processing will assist students in making informed consumer choices. By learning about the production of food, fiber, and animal husbandry, students understand the impact agri-science makes on their communities and communities throughout the world.

4th Grade: D.4.1, D.4.2, D.4.3, D.4.5

E. ECOLOGY/ENVIRONMENT**Content Standard**

Students will understand the relationships between natural resources, ecological processes, and the production and processing of food and fiber.

Rationale

Land and other natural resources need to be managed in a sustainable manner. Balance and agreement need to occur among producers, processors, manufacturers, scientists and other users of natural resources. Students, as citizens, must learn to make informed choices about their environment based on facts.

4th Grade: E.4.1, E.4.2, E.4.4, E.4.4.5, E.4.6

F. BUSINESS MANAGEMENT AND MARKETING**Content Standard**

Students will learn about the operations and economic impact of agricultural business in a world economy.

Rationale

People make complex economic choices related to the allocation of food, fiber, and natural resources. The collective role of consumers, producers, and workers directs business and markets to process, add value, and distribute agricultural products as demanded. It is essential that students learn to make informed choices through the study of production, processing, distribution, and consumption of food and fiber.

4th Grade: F.4.1, F.4.2, F.4.4

Curriculum Standards for Let's Meet the Meat!

1. Global Agricultural Systems
A 4.1
2. Technology/Information
B.4.2 (see LA A.4.4, E.4.1; SC A.4.3)
3. Agriscience/Production
D.4.1, D.4.2, D.4.3, D.4.5
4. Ecology/Environment
E.4.1, E.4.2, E.4.4, E.4.4.5, E.4.6
5. Business Management and Marketing
F.4.1, F.4.2, F.4.4