WHAT'S GROWING ON in Virginia

AGRICULTURE IN THE CLASSROOM • FALL 2018 / VOLUME NO. 2

THIS ISSUE

Beef cattle production is the largest use of land in Virginia agriculture.

VIRGINIA BEEF: It's What's for Dinner!

Cows are popular in Virginia—especially beef cattle. Virginia has a strong beef industry that includes more than 650,000 head of cattle. They are raised on more than 26,000 farms across all regions of the commonwealth, according to Virginia Cooperative Extension.

The state's abundant forage resources and topography are ideally suited for beef production.

"Beef cattle production is an $8 billion-per-year industry in the commonwealth and the largest use of land in Virginia agriculture," said Jason Carter, executive director of the Virginia Cattlemen's Association and the Virginia Beef Industry Council. "Beef cattle turn grass and legumes into high-quality red meat protein that we can use as a wholesome source of many essential minerals and nutrients.

"Additionally, the land utilized by cattle is often land not suited for row crop production or other agricultural commodities. Beef cattle production is good for our economy, our environment and our well-being as part of a balanced diet."

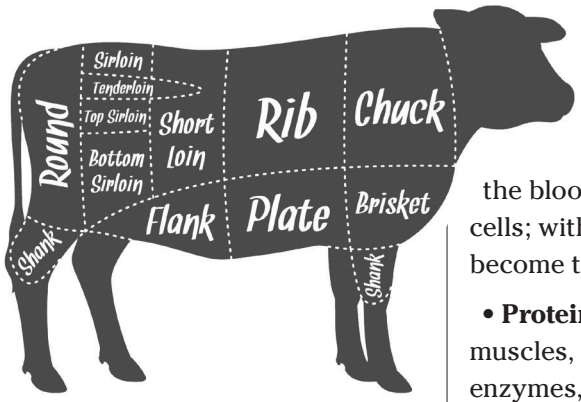
Virginia is mostly a cow-calf state, which means most calves born in the state are sold as feeder cattle and transported to the Midwest, where they continue to grow and fatten up prior to slaughter. The stocker cattle industry also is significant in the state due to the state's pasture resources. Stocker cattle are weaned calves that graze on pasture before they are shipped to feedlots for finishing.

Beef is Virginia's second-largest agricultural commodity and beef cattle are raised in almost every county. The three most common breeds of cattle found in Virginia are Hereford, Angus and Simmental.

Did you know? American beef cattle farmers provide about 25 percent of the world's beef supply. Most U.S. beef cattle farms—97 percent—are family-owned and committed to providing a safe, abundant food supply with choices for all tastes and budgets.

Did you know? Cattle in Virginia date all the way back to the Jamestown settlement. Cattle were considered by the colonists to be a prized possession, and they remain an important agricultural commodity today.

Moo! Cows come in a variety of colors and sizes.



The nutritional value of beef

When it comes to meals using beef, the possibilities are endless! In addition to tasting great, beef includes 10 essential nutrients in each bite.

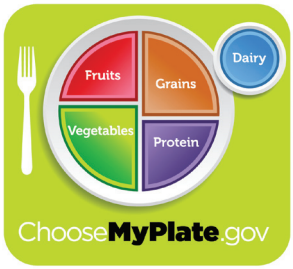
With more than 30 cuts that are considered lean, beef fits well into a balanced and nutritious diet. Beef is a great source of zinc, iron and protein.

• **Zinc** is a mineral the human body needs to grow, learn, heal and stay healthy. It also is important for attention, short-term memory and problem solving.

• **Iron** is needed for the blood to carry oxygen to cells; without enough iron we can become tired, weak and grouchy.

• **Protein** is needed to build muscles, nerve tissue, blood, enzymes, hormones, antibodies and organs and to build, repair and maintain the body. Animal sources of protein are considered to be complete protein because they contain all nine essential amino acids.

Further nutritional info is available at **choosemyplate.gov/protein-foods**.



Remarkable ruminants

Almost half of the land in the United States is classified as pasture and range land. Most of that land cannot be used for crop production because it is too high, rough, dry or wet. Grass from these lands contains cellulose, which is indigestible by humans. Cattle, however, are ruminants, animals that eat grasses and convert them to meat and dairy products that humans can eat.

Cattle producers are responsible for managing cattle and land in ways that will protect the environment. This is in the producer's best interest, since caring for the land will allow the land to care for the cattle on which they depend.

Like other ruminants—goats, sheep, buffalo, deer, elk, giraffes and camels—cattle have a four-compartment stomach that allows them to physically and chemically digest food that cannot be utilized by humans or animals with a simple one-compartment stomach (monogastrics).

The ruminant digestive system of cattle also helps us use feed resources that otherwise would be discarded as waste. These waste products are known as byproducts or incidental products created by the manufacture of something else.

An example is a potato peel. French fries are consumed regularly across the country. What happens to all the potato peels? The Ore-Ida french fry processing plants in Oregon and Idaho send their potato peels to be consumed by cattle in feedlots. The cattle eat the potato peels and convert a waste product into beef—a food rich in zinc, iron and protein.

SOURCE: agclassroom.org

CONTENT AREA

Health and Nutrition

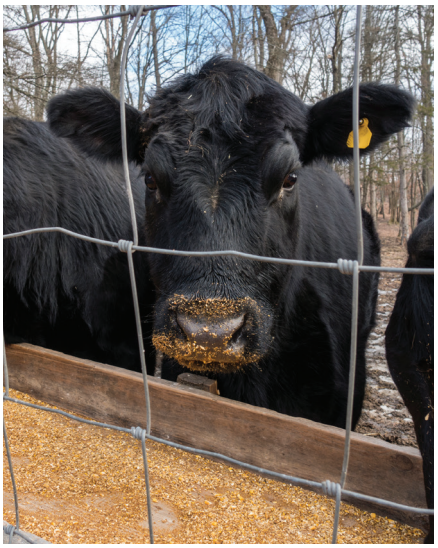
Life Processes

Objective: for students to:

- Explain how farmers take care of their livestock by providing them with nutritious food.

Materials

- Snack-size bags
- Corn cereal squares
- Toasted oat cereal
- Mini marshmallows
- Raisins
- Bowls
- Spoons or scoops



Cattle eat grass, and often their diet is supplemented with a special mix of feed as shown.

LESSON PLAN

Critter Munch

Background Knowledge

As with humans, what animals eat is very important to their health. Cattle need a healthy mix of food. To ensure they are getting the proper mix of nutrients, special animal nutritionists help farmers determine the animals' rations. Cattle eat grass for most of their diet, often supplemented with a special mix of feed. Some examples of cattle feed ingredients are corn, alfalfa hay, grass, barley and minerals. Each ingredient has a different nutritional value to add up to a balanced diet.

Procedure

1. Discuss ways in which farmers take care of their animals: providing them with clean water, shelter, veterinary care and a healthy diet.
2. Ask students to brainstorm foods that would be a part of a healthy human diet. What do they think a healthy diet for a cow would look like? Refer to the Background Knowledge to discuss how cattle are fed.
3. Tell students that they will be making their own critter munch "animal feed."
4. Point out that cereals are made from grains, including corn and wheat, and that each ingredient in their critter munch has a different nutritional value, just like the real animal feed.
5. Have the food items in bowls with spoons or scoops, and give each child a snack bag.
6. Students will put one spoon full of each type of food into a snack bag.
7. Crunch on the critter munch.

Extension

Draw a picture of your favorite animal eating on the farm.

Students will enjoy making their own cattle feed to munch on.

Meet Marshall and Joy Slaven and their daughter, Leah. Both Marshall and Joy are natives of the Shenandoah Valley and grew up on beef cattle farms. Leah is the seventh generation to be raised on the Slaven family farm.

Meet a Virginia Beef Farm Family

Q&A

Favorite thing about raising beef cattle: Our favorite thing about raising beef cattle is the satisfaction of knowing that when our cattle leave for a finishing yard, we have raised a healthy, quality product for consumers around the world.

What you wish people knew: That meat in the store doesn't magically appear. There are countless hours of labor and concern over the well-being of these animals. Regardless of what labeling you see in the grocery store, the biggest concern cattle farmers have in this country is producing a high-quality, safe product for the consumer, because at the end of the day the farmer and the farmer's family are consumers too.

To meet more Virginia beef producers, go to **vabeef.org/farm-to-fork/meet-your-virginia-beef-producers**.

DAIRY

BEEF

Dairy vs. Beef

In the United States, cattle typically are raised to produce beef and milk for our food supply. The term cattle can refer to any breed or gender of the bovine species.

All breeds of cattle produce meat, and all female cattle produce milk after they give birth. However, within the cattle industry, specific breeds of cattle are classified as either "beef" or "dairy" cattle due to their efficiency in producing either meat or milk.

Female cattle, or cows, produce milk. They begin producing milk after giving birth to their first baby, which is called a calf. Cows that can produce large quantities of milk are called dairy cows.Breeds of dairy cows raised in the U.S. include the Holstein, Ayrshire, Brown Swiss, Guernsey, Jersey and the Milking Shorthorn. No breed of male cattle can be used for milk production because they do not produce milk.

Cattle breeds that are more muscular are raised as beef cattle. There are many different breeds of beef cattle raised in the United States, including Angus—the most popular—and other common breeds such as Hereford, Shorthorn, Charolais, Simmental and Limousin. Female beef cows do produce milk after giving birth, but in much smaller quantities than a typical dairy cow—just enough milk to sustain a calf.

SOURCE: agclassroom.org

CONTENT AREA

SOL: This lesson is adaptable to multiple grade/activity levels and may address the following mathematics strands:

- Number and Number Sense
- Computation and Estimation
- Patterns, Functions and Algebra

Sample clues are given below and represent several adaptions of this lesson.

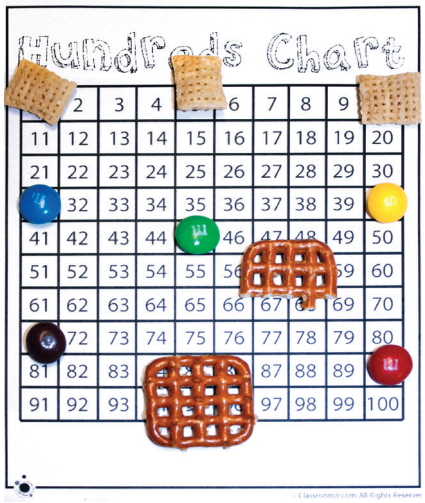
Objective: for students to:

- Recognize and extend a pattern
- Recognize numbers 0-100
- Solve addition, subtraction, multiplication or division problems
- Recognize place values
- Recognize odd and even numbers
- Identify place value

*Objectives reflect multiple adaptions of lesson.

Materials:

- Copy of hundreds chart for each student
- Corn or wheat cereal squares, such as Chex
- M&M's
- Square waffle-cut pretzels
- Skittles candies
- Snack- or sandwich-size plastic bags



LESSON PLAN

Farmer Ben's Farm Hand

Background Knowledge

Prepare for the lesson by pre-packing bags for each student with the above food items.

A need is something necessary for survival. Farm animals need air, water, food, shelter and care. It is the farmer's responsibility to provide these necessities to their animals.

Procedure

1. Distribute hundreds chart to students. Tell them this is Farmer Ben's farm. He is very busy taking care of his animals and needs their help.
2. First, ask students to list different animals that might live on a farm as well as what products we get from them. Example: dairy cows give milk and beef cattle are raised for meat.
3. Ask students to brainstorm different things that Farmer Ben might have to do to take care of his animals. Tell them that Farmer Ben's animals need food, water, shelter and health care. They will be helping Farmer Ben provide this for his animals.
4. Distribute bags with food items in them. Tell students that the cereal squares represent food. They are made from grain; farm animals eat grain too.
5. Turn the M&M's upside-down to create W's; this is water. Farmer Ben must be sure that his animals have plenty of fresh water to drink.
6. The square pretzels look like windows, and they represent shelter. Shelter may be a barn, poultry house or pen.
7. The Skittles are vitamins. Farmer Ben takes care of his animals and makes sure that they stay healthy.
8. Now begin reading the clues that Farmer Ben has given to help students locate where on the farm they should place the appropriate items.
9. Read clues aloud, and ask students to share their answers to check for understanding.

Sample Clues

- **Numbers and Number Sense**
  - i. Place water on numbers with an 8 in the ones place.
  - ii. Place vitamins on the number that has a 5 in both the ones and the tens place.
- **Computation and Estimation**
  - i. Place shelter on the sum of 3 and 7.
  - ii. Place food on the number that is the difference between 86 and 67.
- **Patterns, Function and Algebra**
  - i. Place food on 11, 13 and 15 and water on 12 and 14. What comes next?
  - ii. Place shelter on numbers 100, 97, 94 and 91. What are the next three numbers where shelter should be placed?

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Continued from page 5

Extension

Have students create a Venn diagram comparing and contrasting the needs of farm animals and the needs of humans.

Journal Prompt: Pretend you are Farmer Ben, and describe what a day is like for you. What are your responsibilities?

MY AMERICAN FARM: The Steaks are High

Ever wondered how your delicious beef got to your table? The "steaks" are high for farmers and ranchers who know the importance of caring for animals and the beef production process. Beef up your math skills as you play the game The Steaks are High at **myamericanfarm.org/classroom/games**.

BONUS ACTIVITY

Build-a-Burger Activity

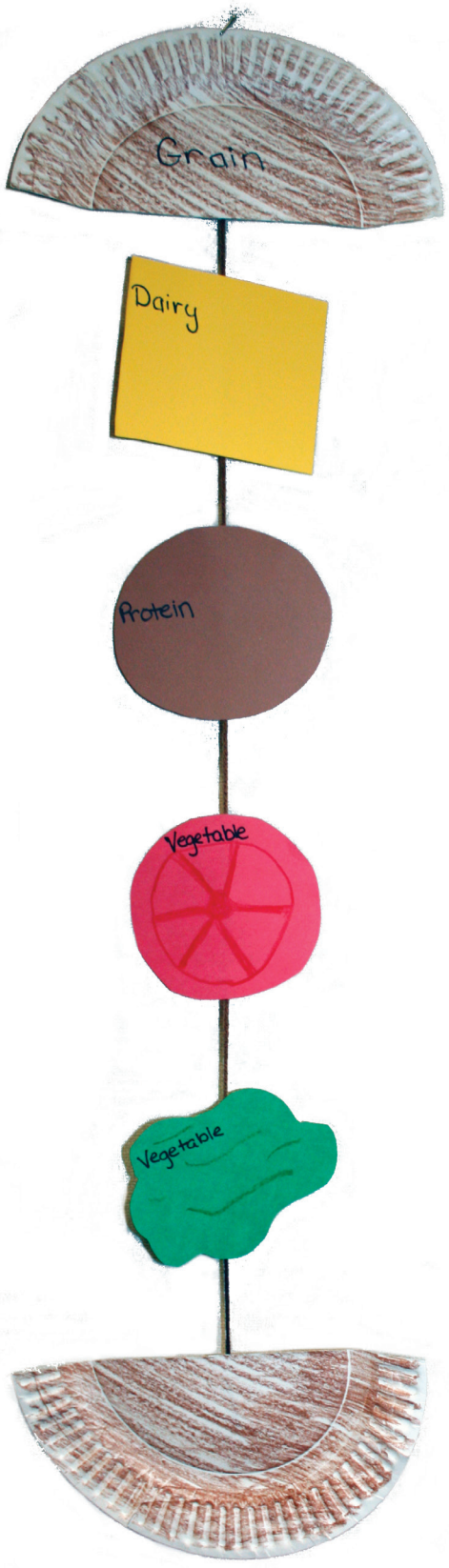
Learn about the food groups while making a favorite food. Burgers are one of the most popular foods in the U.S. In fact, each year Americans eat about 25 million hamburgers! Most cheeseburgers include products from at least four or five food groups.

Materials

- Various colors of construction paper
- Tape
- White paper plates
- Yarn
- Markers or crayons
- Scissors

Directions

1. Cut a paper plate in half, and color it tan or brown. This will serve as the bun.
2. Next, use the construction paper to cut out your patty and favorite toppings, such as cheese, lettuce, tomatoes, pickles, bacon and onions.
3. Line them up vertically and tape to the string of yarn. On the back of each food, write the food group in which it belongs: dairy, protein, vegetables, fruit or grains.



BOOK CORNER

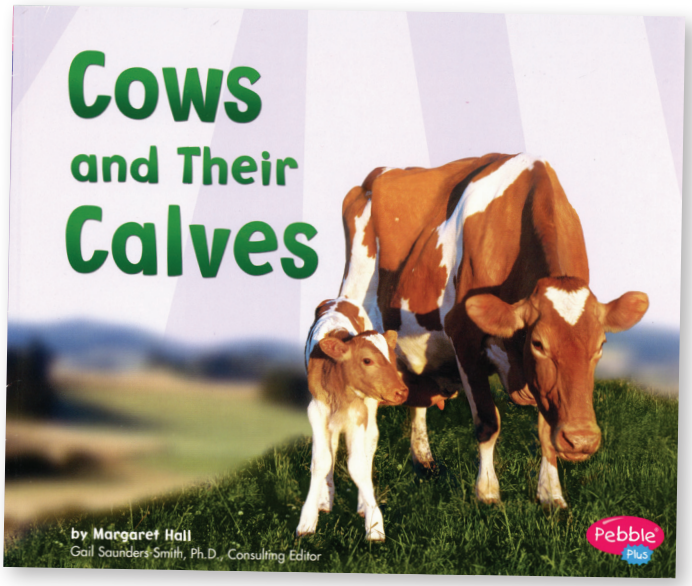
Little Joe, Sandra Neil Wallace, Knopf Books for Young Readers, ISBN: 9780375860973

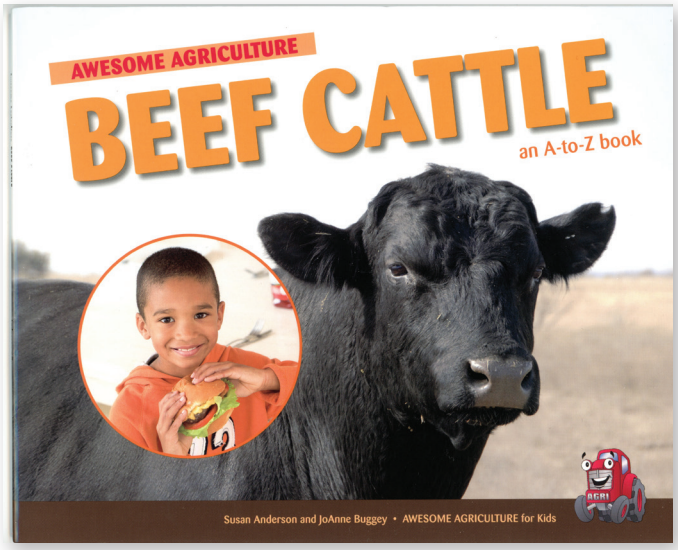
The Girl Who Thought in Pictures: The Story of Dr. Temple Grandin, Julia Finley Mosca, The Innovative Press, ISBN: 9781943147304

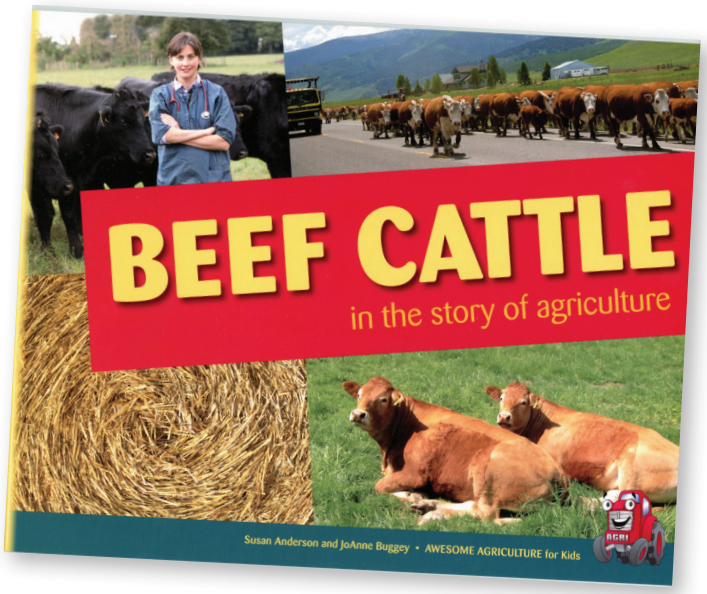
Beef Cattle in the Story of Agriculture, Susan Anderson and JoAnne Buggey, Northwest Arm Press Inc., ISBN: 9781926781099

Cows and Their Calves, Margaret Hall, Capstone Press, ISBN: 9780736821056

Awesome Agriculture: Beef Cattle, An A-to-Z Book, Susan Anderson and JoAnne Buggey, Northwest Arm Press Inc., ISBN: 9781926781082







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Virginia Foundation for Agriculture in the Classroom
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There are more than 750 recognized breeds of cattle worldwide, including this breed, the Angus, which is the most popular.

About the Newsletter

What's Growing On In Virginia? is a semiannual publication for Virginia educators and those who want to connect children with agriculture through education.

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For additional information and activities, visit our website at **AgInTheClass.org** or call **804-290-1143**

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