

BEEF CATTLE RESOURCE ROUND UP

Round Up a collection of Agriculture in the Classroom's favorite beef themed resources for the classroom.

Featuring classroom lessons, kid-friendly recipes, book suggestions, and many more additional resources.

This collection has been generously sponsored by the Virginia Beef Industry Council.



AGRICULTURE IN THE CLASSROOM
AgInTheClass.org

Helping Farmer Brown

Standards of Learning

This activity is adaptable to fit many of the mathematics SOLs in the following strands:

- Number and number sense
- Computation and estimation
- Geometry
- Patterns, functions, and algebra

Objective

Students will:

- Count numbers to 100
- Identify 5's and 10's
- Identify numbers greater or less than
- Answer basic addition and subtraction questions

Materials

- Copy of a hundreds chart for each student or pair of students
- Shredded wheat cereal (to represent hay)
- Animal crackers (to represent farm animals)
- M&Ms (to represent water troughs)
- Beans (to represent seeds for a crop)

Background Knowledge

Farm animals need air, water, food, shelter and care. It is the farmer's responsibility to provide these necessities to his or her animals. Cattle spend much of the day grazing. The cow's ability to digest grass helps humans by providing a food source on lands that are too not suitable for agricultural crops. Just as humans need variety and balance in their diets, animals need more than just grass to stay healthy. Food eaten by animals is called "feed." Animal feed provides energy, fat, and fiber; protein for the development and maintenance of muscles and the synthesis of hormones and enzymes; and vitamins and minerals, important for the growth and maintenance of bones and other body systems. There are many tables and books of research data that help beef producers determine the nutrient and energy requirements of their animals. Once the nutrient and energy requirements are determined, the producer may have feed custom-mixed or may buy commercial feed. Further, through participation in Beef Quality Assurance programs, which ensure beef producers are properly caring for their livestock, farmers demonstrate concern for the animals' well-being and for general food safety and quality.

Procedure

1. Have students work individually or in pairs.
2. Distribute a copy of the hundred chart to each student or pair of students (you may choose to laminate these)
3. Tell the students that today they will be helping farmer Brown around his farm. He has lots of things to do all around the farm and needs the students' help getting his chores done. He has split his farm into 100 plots to make it easier for you to know where he wants you to put things.
4. Ready the clues that Farmer Brown has given to help the students locate where Farmer Brown wants items to be placed (Use the sample clues to help create your own clues that specifically address your grade level SOLs).



For more resources to connect children to agriculture visit AgInTheClass.org.

5. Review concepts presented in the clues. Ask volunteers, or select students, to give you the number or numbers that answer the clue to check for understanding.

Sample Clues

1. On really windy days or during afternoon storms, a sharp wind blows across Farmer Brown's farm. This bothers the animals and blows away the soil he needs to plant his crops in. Help him block some of the wind by planting trees in the plots that have numbers you say when counting by tens.
2. Farmer Brown's horses need hay to munch on. Place a bale of hay in each of the numbered plots that are between 72 and 76.
3. The animals on the farm need lots of water. Help Farmer Brown put water troughs on plots 1-10 and all numbers that have a one in the tens place. What type of geometric figure did this create (right angle).
4. Farmer Brown needs his cows to all be placed in one section of the farm for feeding. Help him get his cows to the plot that's the number that is the sum of 26 and 51.
5. Help Farmer Brown by placing a bale of hay on the number plot that has an 8 in both the ones and tens place.

Develop clues using:

Patterns

- Alternate bales of hay with water on a few numbers and then ask what will come next in the pattern
- Greater than/less than
- Hay on number that is 6 less than 40
- Water trough on number that is 10 greater than 34
- Animal on a number that is greater than 12 but less than 14

Geometry

- Place objects on numbers to create angles, ray, line, line segment, square, rectangle, trapezoid, parallelogram, etc.

Place value

- Crop on number with a 7 in the tens place
- Hay on number with a 3 in the ones place
- Animal on number with an 8 in the ones place and 3 in the tens place

Computation

- Water trough on the number that is the sum of 12 and 76
- Hay on number that is the difference between 99 and 57
- Crop on number that is the product of 2 and 10



For more resources to connect children to agriculture visit AgInTheClass.org.

From Sun to Steak

Standards of Learning

Science: 4.5

Objective

Students will:

- Create an energy flow mural depicting the steps in the energy web from sun to decomposers

Materials

- Large piece of bulletin board paper with scenic background including hills, valleys, waterways, stores, and houses
- Glue sticks
- Index cards
- Yarn
- Markers

Background Knowledge

Cattle, as well as other ruminant animals, are able to digest plant cellulose—a substance indigestible by humans. This unique characteristic of ruminant animals assists in converting energy into forms that can be used by other animals including humans. Beef and dairy products result from the ruminant digestive process. In this activity, students will create a mural which depicts the energy flow from the sun to food people eat.

Procedure

1. Define “ruminant” and list a variety of animals that fit into this category.
2. Discuss how students will create a mural showing the energy flow from the sun to the food people eat.
3. Divide students into groups of 2-3. Distribute index cards with the following phrases (one phrase per card, one card per group):
 - Cattle and sheep
 - Plants get their energy from sun, water, and air
 - Grazing animals live on land not suitable for crops
 - People eat fruits, vegetables, meat, dairy products, and grains
 - Crops grow on fertile land
 - Ruminant animals have a unique digestive tract
 - Food from farms is processed, packaged, and sent to stores
 - Bacteria, earthworms, and snails are types of decomposers
4. Have each group decide where on the mural their card should go. Have them create and add a scene that depicts their card.
5. After the mural is complete pass out yarn to each group. Have them use the yarn to connect their scene to others. For instance, the group with “cattle and sheep” would connect to “ruminant animals have a unique digestive tract” which would connect to “grazing animals live on land not suitable for crops.”

Credit

Lesson adapted from California Agriculture in the Classroom.



For more resources to connect children to agriculture visit AgInTheClass.org.

BEEF UP YOUR NUTRITION

LESSON SNAPSHOT

RELATED “MY AMERICAN FARM” GAME



Grocery Grab
Available at www.myamericanfarm.org

GRADE LEVELS: Third - Fifth

CONTENT AREAS: Science, English Language Arts

STANDARDS

3-5-ETSI-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
(Reference:

3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Next Generation Science Standards

W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories

Common Core, English Language Arts

5.5.5 Choose a healthy option when making a decision.

National Health Education Standards

WHAT WILL YOU DO?

By the end of this activity students will:

- Explore the nutritious benefits of lean beef cuts within a daily diet through transforming a Beef Bingo card into a nutritious meal!

SUPPLIES YOU’LL NEED

- Paper plate (1 per student, plus one for an example)
- Coloring utensils
- Scissors (1 per student)

- Glue/glue stick (1 per student)
- Printed or visual Beef Bingo - Contents sheet (attached)
- Printed or projected visual of USDA My Plate graphic (available at www.choosemyplate.gov)
- Beef Bingo Cards (1 per student plus example)
- Bingo chips (optional, may use a marker instead)
- Bingo caller (online apps available), random number/letter generator, or teacher choice!
- Projector and screen
- (Optional) Computers and internet access – 1 per student or pair, *This is only necessary if you wish to do the My American Farm game in class.
- (Optional) Headphones – 1 per student, *This is only necessary if you wish to do the game individually in class.

PREPARATION

- Visit My American Farm online (www.myamericanfarm.org) to preview the “Grocery Grab” game.
- Beef is part of a nutritious diet! This activity begins with a beef BINGO game to get the students familiar with different nutritious food available, including lean beef cuts. After playing Beef BINGO, the students will choose and cut out their card items to fill up their individual plate with a nutritious and balanced meal, based on the USDA MyPlate guidelines.
- To prepare for the lesson, set a bingo card, bingo chips, markers, paper plate, scissors and glue at each student spot. Bring up the USDA My Plate website, and print or display the My Plate graphic for the students to see.
- Areas of the lesson that are available to modify are marked with an asterisk (*).

INTRODUCTION

Step I: Beef Bingo

- Explain the concept of bingo: the teacher/facilitator will call a letter (B-I-N-G-O) and an item. If the student has that item in the letter-column, they get to mark it off. The first person to get five items marked off in a row/column/diagonally wins! All students get the center space





as a “free space”.

- Display the Beef BINGO Contents sheet, or recreate on a white board. Ask students to describe what they see. (Listen for students to identify food groups: fruits, vegetables, grains, protein, dairy) Tell students that these are several food options. There are many sources of protein, but today we will focus on beef as the primary protein source.
- Ask students where beef comes from. Allow answers and/or discussion if questions of beef origin arise. Clarify that beef is one of the many products that we harvest from cattle. Beef is protein packed meat! A 3 oz serving of beef is also an excellent source of protein, zinc, selenium, niacin, vitamin B6 and vitamin B12 and a good source of iron, riboflavin, phosphorus and choline.
- Have student copy each food item listed into any of their BINGO squares. Each student should have each food item listed only once.
- Use an online bingo caller or teacher choice to begin calling letter/number combinations. Students will fill in their cards as called. Stop when student calls “bingo!”; Ask them to tell the class what meal options were in their winning line. Congratulate the winner(s). Play more rounds as time and attention allows.

- Display the USDA MyPlate visual so that all of the students can see. Go over the general categories (Protein, Dairy, Vegetables, Fruits, Grains) and ask students what type of foods might fall in the different categories. Assist or clarify as needed.
- Ask students to get their paper plate and write the 5 USDA MyPlate categories on their plate. Protein, Dairy, Vegetables, Fruit, and Grains. Tell students that they can incorporate dairy onto the items onto their plate, or assume they have a dairy drink, such as milk!
- Tell students that they may begin to cut and glue their Beef BINGO board items to make their plate/meal.

*If time allows, students may color their picture meal choices after they cut and glue them onto their plate while waiting on the rest of the class to complete their plate.

- Once students have finished the activity, allow students to pair and share. Encourage students to tell their classmate why they chose the food in each category.

*If time allows, allow student volunteers to share their plate and why they chose the food in each category.

Step 3: Play Game

- At this point you may elect to have students play “Grocery Grab”, available at myamericanfarm.org. Students can work individually or in pairs.
- Inform students that they’ll now have a chance to discover more fun facts about beef cattle and nutrition by playing a game.

*You may choose to have students play this game before you arrive, after you have left, or at home with adult permission.

*The game is supported by audio. You may wish to secure headphones for students, or play the game as a class while displaying on a large screen.

WRAP UP

REVIEW, ASSESS, CHALLENGE

Step 4: Bring it Back to BINGO

BODY

MAIN CONTENT

Step 2: USDA MyPlate Activity

- Inform students that they will be using their Beef BINGO card to create a meal. There will be challenges during the activity!
 - » Each student will create an individual meal based on their taste.
 - » The students will have to choose their meal selections based on USDA’s My Plate healthy guidelines.

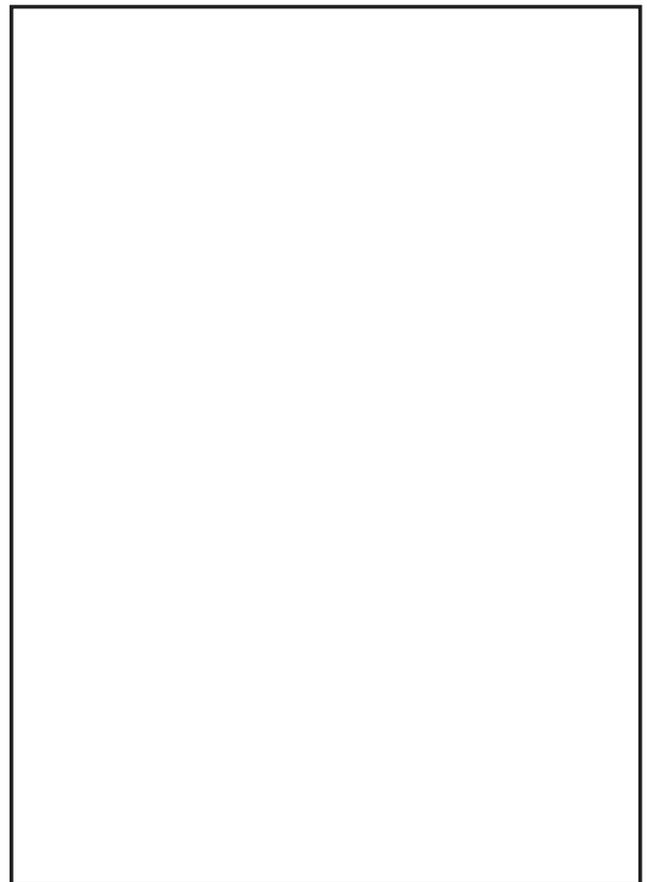
» The students will have to be careful in their choices so as not to overindulge in a certain category.





- Display/reference the USDA MyPlate graphic so that all students can see. Remind students that lean beef is a nutritious source of protein that can be incorporated in daily meals.
- Verbally list the beef meal items represented on the Beef Bingo card. Ask students to raise their hands and share additional beef meal items that they may eat at school or at home.
- Encourage students to think about balance and nutrition when they sit down to a meal. Don't forget to reference the USDA's My Plate as a guideline!
- If you are a classroom teacher, reach out to your county Farm Bureau or State Beef Council for recommendations of people in the industry to connect with your class.
- If you are a volunteer educator, brainstorm contacts you have in the industry and serve as a resource for a local school!

TEACHING NOTES



MODIFICATIONS AND CONSIDERATIONS

*To add on the lesson, post the beef choices sheet available from BeefNutrition.org here: <http://www.beefnutrition.org/CMDocs/BeefNutrition/ChoicesOfBeef2013FINALApproved.pdf>. Scroll to the second page and talk about the nutrients available in a serving of lean beef. Emphasize the vitamins and minerals that are within beef, as well as their benefits to our bodies.

*If questions arise during the lesson about the way beef is raised, reference the first page of the resource above and the graphic detailing beef feed and lifestyle, or refer to the ExploreBeef.org graphic here: <http://www.explorebeef.org/CMDocs/ExploreBeef/Lifecycle%20Handout.pdf>

* Be conscious of possible cultural or religious restrictions involving beef within your class. If special situations arise, be ready to speak to available alternate protein sources (other meats, cheese, meat substitutes, beans, etc.).

* This lesson provides a great opportunity to connect students with men and women who work in the beef industry.

FOUNDATION CONTACT INFORMATION



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BEEF BINGO - CARD

B	I	N	G	O
		OUT TO PASTURE! FREE SPACE		

BEEF BINGO - CONTENTS

FILL YOUR CARD!

Write each word in a single square on your BINGO card before you play!

Strip Steak
Brisket
Hamburger*
Tri-Tip
T-Bone

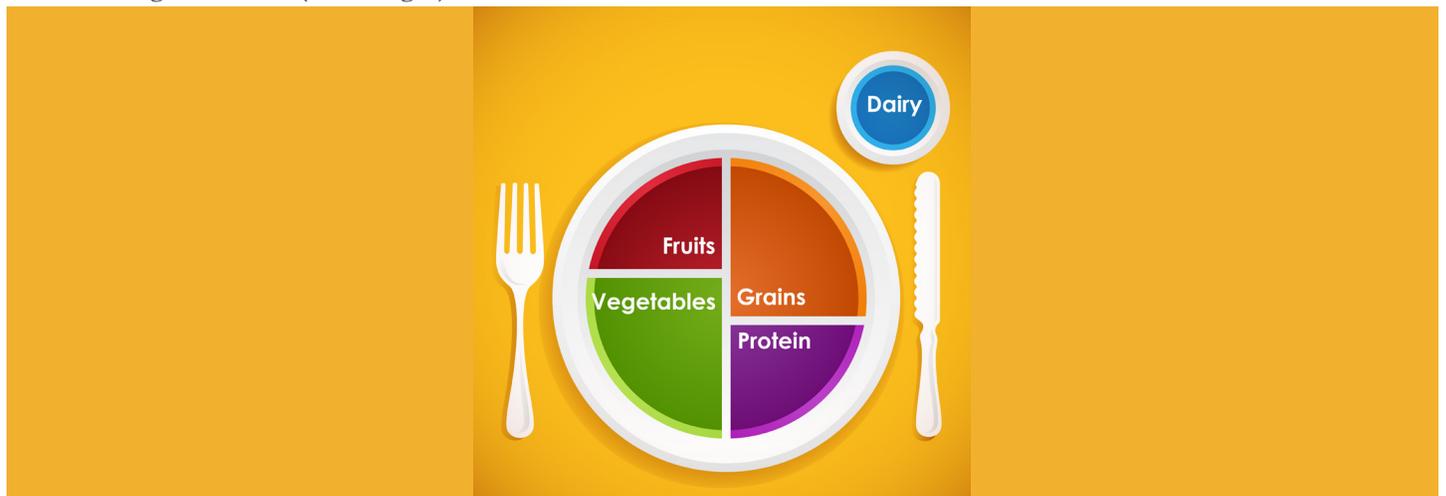
Broccoli
Corn
Kale
Spinach
Carrots

Milk
Cheese
Yogurt
Cottage Cheese

Apples
Grapes
Mangoes
Oranges
Pineapple

Rice
Quinoa
Tortillas
Pasta
Bread

* 93% Lean ground beef (hamburger) is considered lean



BEEF BOOK ROUND UP

Little Joe by Sandra Neil Wallace

The Girl Who Thought in Pictures: The Story of Dr. Temple Grandin by Julia Finley Mosca

Beef Cattle in the Story of Agriculture by Susan Anderson and JoAnne Buggey

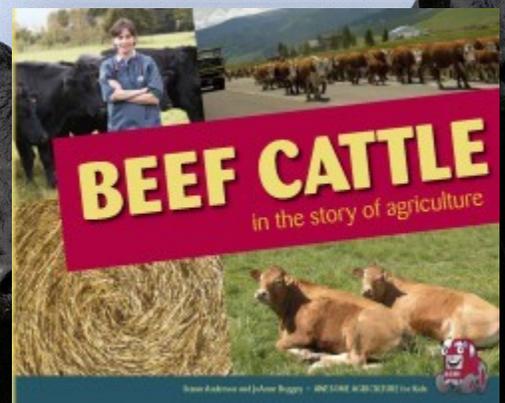
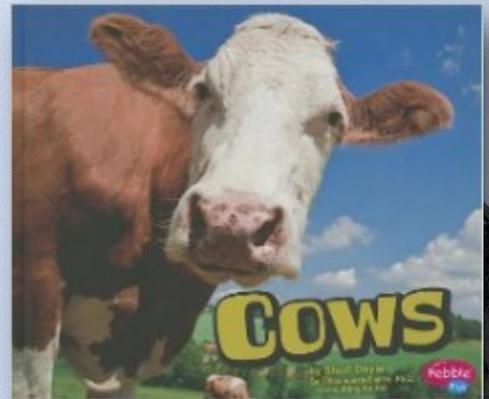
Cows and Their Calves by Margaret Hall

Cows by Sheri Doyle

Awesome Agriculture: Beef Cattle, An A to Z Book, by Susan Anderson and JoAnne Buggey

Levi's Lost Calf by Amanda Radke

The Beef Princess of Practical County by Michelle Houts



Little Joe

by
Sandra Neil Wallace

Companion Guide
From



Introduction

Little Joe can serve as an introduction to the livestock industry, told from the perspective of a 3rd grade boy showing his first bull calf. Join Eli Stenger and his family and neighbors as they spend 9 months preparing a cow, some rabbits and a couple pigs named after candy for their adventure at the county fair!

In this companion guide you will find “*Power Words*” and “*Vo-Cow-Bulary*”. These are words from each chapter that may be unfamiliar to students. Students could define these, use them in sentences or work to use them in writing. “*Power Words*” are more traditional vocabulary words, where as “*Vo-Cow-Bulary*” are words associated with agriculture. Not all chapters have unusual vocabulary words, so in some cases there is not a vocabulary section included. There are “*Questions*” to use as discussion starters or as reading checks and writing prompts called “*Write Away*” to encourage students to write more about a specific topic. An “*Extension Activity*” has been added to some chapters with links to other Agriculture in the Classroom activities. Some questions, writing prompts and art activities build on previous examples. Teacher might consider having students using special notebooks or folders to store all materials for this book for easy reference.

Chapter 1 A Special Delivery

Power Words

Nervous
Rustling
Nostril
Stanchion
Sired
Tradition
Rafters
Cooed
Nudged
Navel
Infected

Vo-Cow-Bulary

Hen
Holstein
Heifers
Angus
Bull
Loin
Rump
Birthing Pen
Feed Bin
Kernels
Muzzle
Carhartt

Questions

1. Why was Eli helping in the Barn?
2. How does Grandpa describe the barn?
3. Eli describes the heart beat as a fluttering butterfly.
How would you describe an animal heartbeat?
4. Describe Hannah. How is she different than Eli?
5. What does Hannah want to name the bull calf?
6. Why does Eli chose 'Little Joe' as a name?
7. What does it mean that everyone would want to get a piece of Little Joe?
8. What does it mean that Eli is starting a new tradition?

Write Away

- * Eli helped pull a calf! Wow—write about how he felt about this event.
How would you feel?
- *The Stenger Family has their own traditions. What traditions does your family have?

Extension Activity

Map out Eli's family tree. Include everyone you have met in the book so far. Hold on to this and add to it throughout the book. Make a family tree for your family. Check out www.grandparents-day.com/html/family_tree-nv.html.

Chapter 2 Tattoo Day

Power Words

Corral
Weaned
Moist
Piercing
Gentling
Disinfectant

Vo-Cow-Bulary

Market Steer
Pitchfork
Alfalfa
Halter
Crossbred
Milk House

Questions

1. Why is the farm named 'Windswept Farms'?
2. Why is the ax important to Eli on the farm?
3. Why does Spider name fit him?
4. What can you compare tagging to?
5. Who is E-1?
6. Eli's parents work on the farm, but they also have other jobs. What are their other jobs?
7. What is the difference between animals and people according to Pa?

Write Away

1. Describe the differences Eli notices about various types of cobwebs.
Write about what you think of cobwebs.
2. What do you think about naming a calf instead of giving it a letter and a number combination?

Extension Activity

Check out Beautiful Bovine at www.agintheclassroom.org

Chapter 3 Sweet and Sour

Power Words

Camouflage
Hyperventilating

Vo-Cow-Bulary

Scours
Akita
Bull
Steer
Needle Teeth
Wallow

Questions

1. Describe Keller, his hands and his teeth.
2. How does Keller name his hogs?

3. Why does Keller clip the teeth of his hogs?

Write Away

1. Keller seems to tell some tall tales. What do you think about his bee hunting and eating story?

Extension Activity

Learn more about Illinois Pork at www.ilpork.com

Chapter 4 Don't Let Go

Power Words

Raspy
Thrashed
Blotchy

Vo-Cow-Bulary

Brisket
Dairy
Dewclaws
Muck Boots
Silo
Muzzle
Progeny
Marbling

Questions

1. Describe how the Stenger barn was built.
2. Pa doesn't want Eli to name Little Joe, but what did Eli find out about Pa's first cow?
3. Why does a cow have four stomachs?
4. Who is Eli's father?
5. How does Eli describe Little Joe's ears?
6. Explain Trick or Treat for Little Joe.

Write Away

1. Explain what Grandpa means when he says you can give a cow a name?
2. Explain if you think Eli should have taken Eli out by himself.

Extension Activity

Want to know more about Barns? Check out www.thebarnjournal.org.

Chapter 5 Mending

Power Words

Nickering
Kindle
Callus

Vo-Cow-Bulary

Free Range
Appaloosa
Mini-Lops

1. Why did Eli get stitches?
2. Who is Tess?
3. Why did Eli and Pa have to fix the fence?

Write Away

1. Pa wants Eli to show Little Joe who is boss. Why does Eli wonder if Pa has calloused up for good?
2. Explain how unicorns are like cows and dogs.

Extension Activity

Check out various rabbit breeds at www.arba.net/Breeds.htm and horse breeds at www.horsebreedslist.com.

Chapter 6 Sorry

Power Words

Quickening

Vo-Cow-Bulary

Currycomb

Questions

1. What is Eli sorry about?
2. How does Little Joe belong to Spider?

Write Away

1. Who is Ned Kinderhoff and how is he in competition with Pa?

Extension Activity

Want to grow a giant pumpkin? Check out this website www.merebrow.com/home/mbgp/how_to_grow.html. Illinois Ag in the Classroom's Pumpkin Ag Mag could be helpful too.

Chapter 7 Big Night

Questions

1. Where does Eli go every Wednesday night?
2. Why does Grandpa love tomatoes?
3. Describe how Eli walks across the apple orchard.
4. Describe the conflict between Grandpa and Dad.

Write Away

1. Describe what happens on Big Night.
2. Why did Grandpa allow Eli to join in the Big Night, when Ma and Pa wouldn't let him?

Extension Activity

Spotted Salamander migration is an event that happens on the east coast of the US. Learn more about this at http://www.massaudubon.org/Nature_Connection/wildlife/index.php?subject=Reptiles%20and%20Amphibians&id=58.

There are various You Tube videos on the spotted salamander migration as well.

Chapter 8 Missing Mama

Power Words

Warbled
Brittle
Gnarled
Bawling
Yowled

Vo-Cow-Bulary

Hay Mow

Questions

1. How does the author describe the color of clover?
2. How does Pa want Little Joe to look at the time of the fair?
3. Why does Pa call Little Joe E-1?
4. How do Pa and Eli trick Little Joe?
5. Why does Little Joe spend the night bawling?
6. Pa finds Eli with Little Joe, what does he make him do for an hour before school that day?

Write Away

1. Describe how Eli helps Little Joe? Would you be willing to help out in the rain in the same way? Write your thoughts.

Chapter 9 First Cut

Power Words

Coaxing
Prodding
Amber
Frantic
Impressive

Vo-Cow-Bulary

Show Stick
Silage
Rations

Questions

1. What did Eli discover about Pa and his first animal?
2. How did Pa raise money to help with his first animal?

3. In Chapter 5 (page 52) Ma ask Pa about selling eggs. Pa says they don't sell eggs. Why is this ironic?
4. What is Pa's secret to making his pumpkin grow?

Write Away

1. It seems like Pa wants to win, what does Eli want?

Chapter 10 Trading Eggs

Power Words

Condiment
Metallic
Interfere

Vo-Cow-Bulary

Hens
Roper
Blower

Questions

1. What is Ma's job?
2. How long has Ma been selling eggs?

Write Away

1. Describe what Ma means when she says "pumpkins don't hurt".

Chapter 11 Cow Tipping

Power Words

Spiky
Encouraged
Katydid
Stammered

Vo-Cow-Bulary

Lupine
Lobelia

Questions

1. Why is Pa worried about Eli checking fields?
2. Describe Keller's new look.
3. What is cow-tipping?
4. How does Eli feel about cow tipping?
5. What happens when Keller sees the snake?

Write Away

1. Describe how the chapter ends and the fun time the family has on July 4.

Extension Activity

Various forms of Lupine and Lobelia grow in Illinois as perennials. Check out urbanext.illinois.edu/hortihints/0104b.html to see what grows in Illinois, then enter that name into an image search to see what it looks like.

Chapter 12 In the Show Ring

Power Words

Instinct
Girth

Vo-Cow-Bulary

Show Box

Questions

1. Eli wishes he had a hat on. Why isn't he practicing with a hat?
2. What should Eli do if he sees trouble?
3. Why did Grandpa give Eli the show box early?
4. What was inside the show box?

Write Away

1. Write about a special gift you received for a special birthday or early birthday present.

Extension Activity

Eli's show box has many items to help keep Little Joe properly groomed. Visit www.sullivansupply.com to see grooming videos and to see a variety of grooming supplies.

Chapter 13 Poison Weeds

Power Words

Wobbly
Crouched

Vo-Cow-Bulary

Crossbred

Questions

1. What did Pa find?
2. What could happen if a cow eats the weeds?
3. Why will Eli get money even if he doesn't go to the fair?
4. What happened to Shamrock?

Write Away

1. Eli discovered why Pa was so hard. Write why you think Pa is so upset. How could Eli help him?

Chapter 14 No Trespassing

Power Words

Trespassing
Waddled
Frolicking
Skittish
Mimicked
Disqualified
Whitewashed

Vo-Cow-Bulary

Foal
Dachshund
Yearling

Questions

1. How does Eli describe the colt's mane?
2. How does Tess describe what beef farmers do?
3. What does Eli say about eating horses?
4. Where is Eli going to hang his blue ribbon?
5. Why doesn't Eli want to go into the barn?

Write Away

1. Write what you think happened after Eli heard the rumble from the barn.

Chapter 15 Broken Bones

Power Words

Frisky

Vo-Cow-Bulary

Willow

Questions

1. What happened to Keller's arm?
2. Will a broken arm stop Keller from showing at the fair?
3. Why does the family need straws for spaghetti?
4. Why is Eli so quiet?
5. Why isn't this a regular evening?

Write Away

1. Why can't Eli sleep? Write what you think is going through his mind.

Chapter 16 All Jittery

Power Words

Show
Kindling
Dozing

Vo-Cow-Bulary

Bedding
Grooming Chute
Simmental

Questions

1. Why can't Little Joe have breakfast?
2. Why don't you think Eli had breakfast?
3. How easy was it for Grandpa and Pa to load Little Joe?
4. How does Grandpa describe what the birds will do?
5. How much does Little Joe weigh?
6. List 3 items that weigh about the same as Little Joe.
7. Where is Little Joe's stall located?
8. What surprise did Hannah bring for Little Joe?
9. How did Spider react at the fair?
10. How is showing cattle different than showing pigs according to Keller?
11. What does Keller predict will happen at the show?
12. What did Eli tell the judge he fed Little Joe to make him so big?
13. What prize did Eli and Little Joe win?
14. What happened to Keller and his pigs?
15. What does Pa get for Hannah?

Write Away

1. Grandpa offers Pa a hand when he falls, but Pa brushes it aside.
Describe what you think is wrong.
2. Write about what you think is going through Eli's mind in the show ring as the judge is talking to him.
3. At the end of the chapter Eli talks to Pa about Shamrock. Write what you think Pa is thinking about.

Chapter 17 Sold

Power Words

Blister

Vo-Cow-Bulary

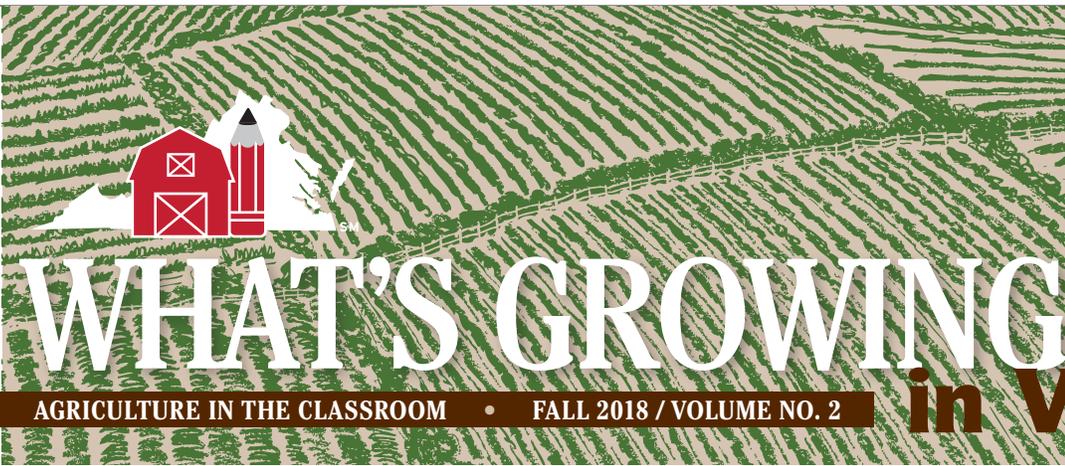
Carcass

Questions

1. What will Eli leave with Little Joe after he is sold?
2. What does Eli wish Little Joe would do to help him not be sold?
3. What is Eli thinking about as Little Joe is sold?
4. What does Eli think a real farmer would be thinking about?

Write Away

1. At the end of the book there is a surprise ending. Why did Grandpa buy Little Joe? Write in detail what you think will happen to Little Joe and Eli in the next couple of months.



WHAT'S GROWING ON **in Virginia**

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

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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.

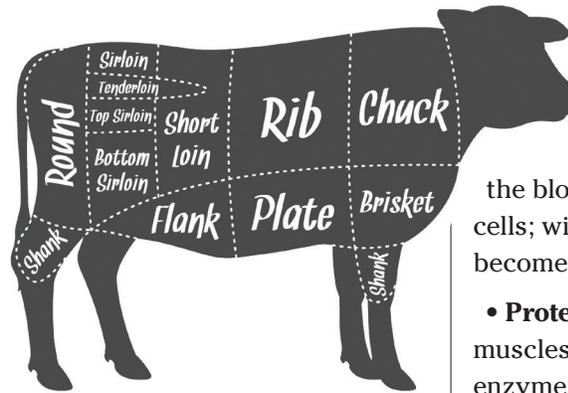


Did you know? American beef cattle farmers provide about 25 percent of the world's beef supply. Most U.S. beef cattle farms—97 percent—are family-owned and committed to providing a safe, abundant food supply with choices for all tastes and budgets.

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.

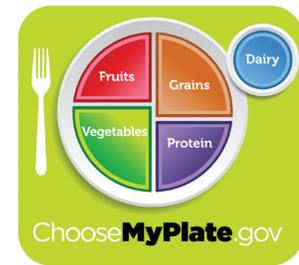
- **Zinc** is a mineral the human body needs to grow, learn, heal and stay healthy. It also is important

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 adaptations of this lesson.

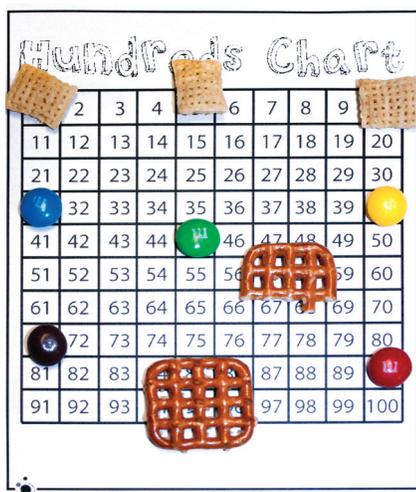
Objective: for students to:

- 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 adaptations 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?

Continued on page 6

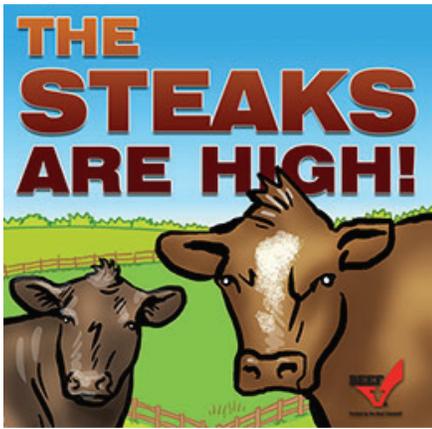


Continued from page 5

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

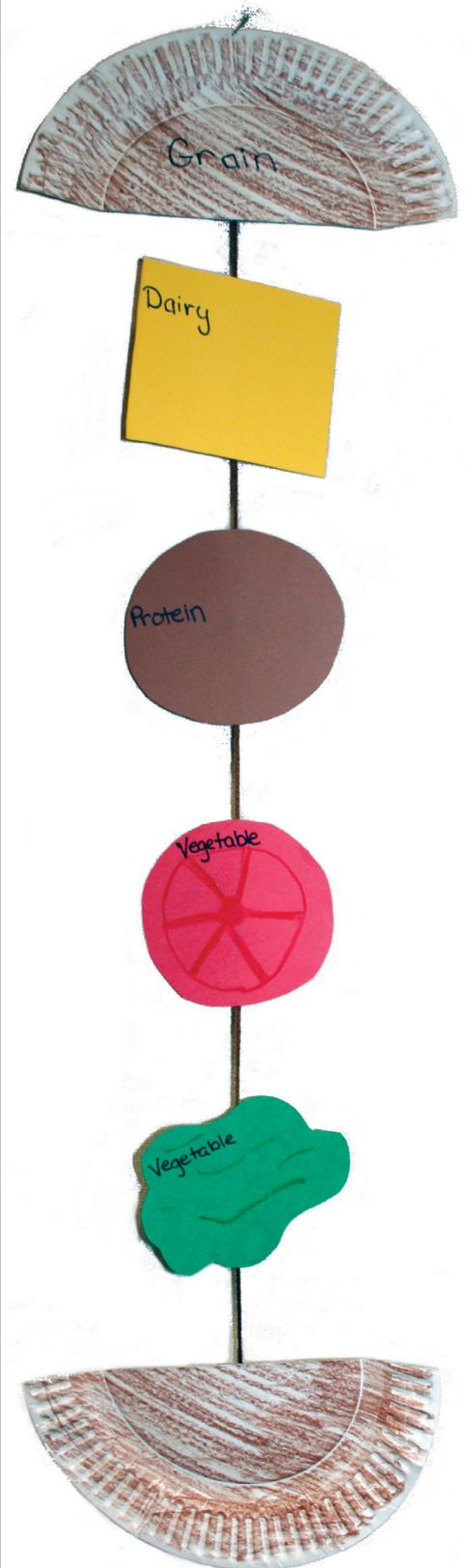
Learn about the food groups while making a favorite food. Burgers are one of the most popular foods in the U.S. In fact, each year Americans eat about 25 million hamburgers! Most cheeseburgers include products from at least four or five food groups.

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

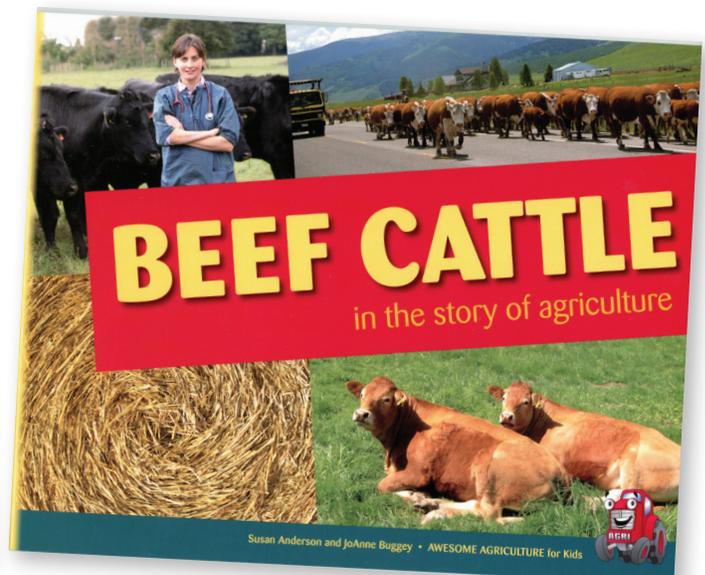
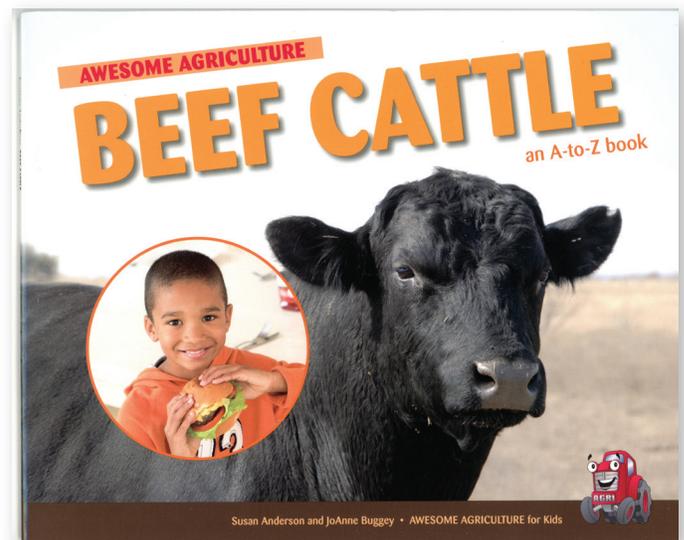
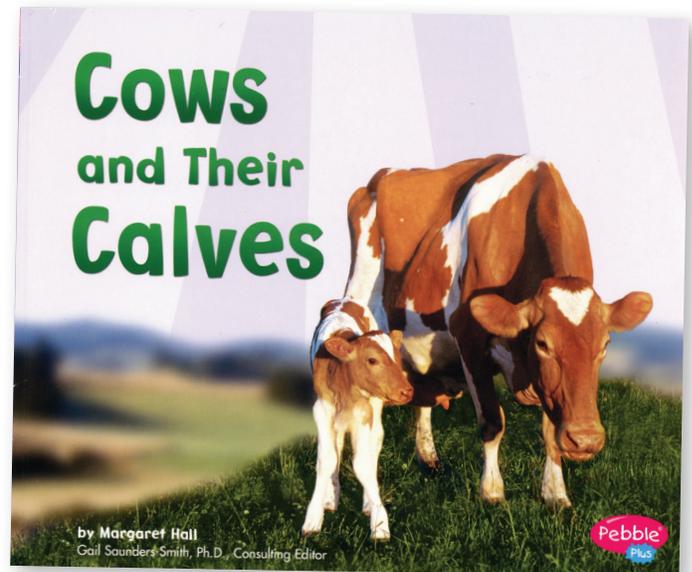
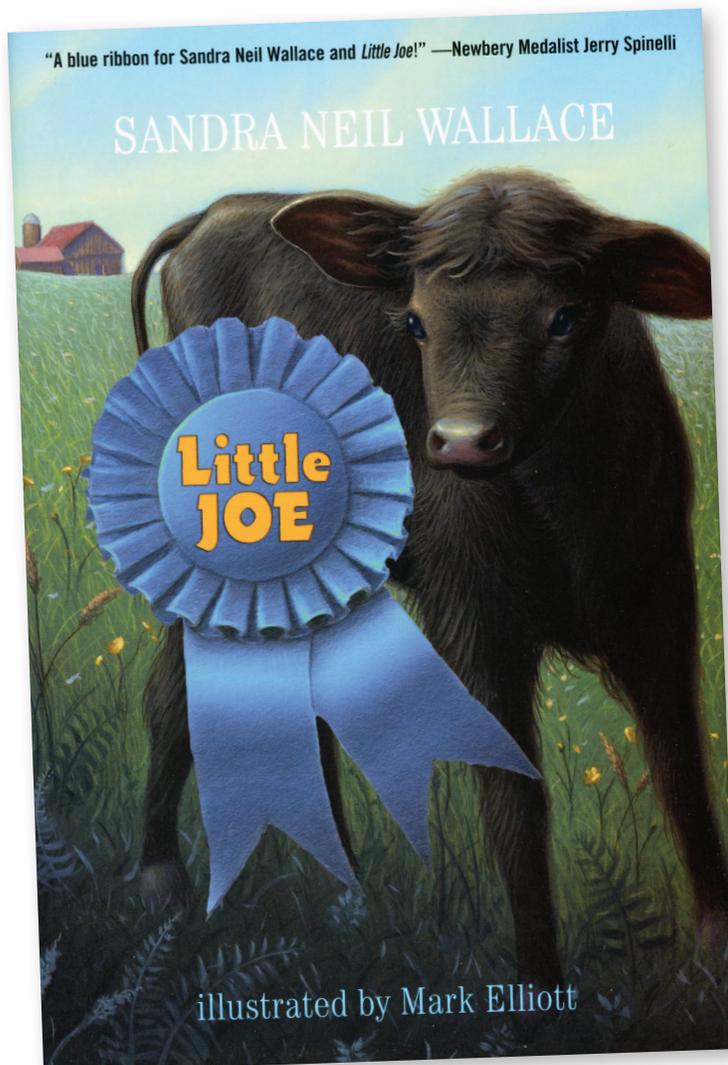
Little Joe, Sandra Neil Wallace, Knopf Books for Young Readers, ISBN: 9780375860973

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



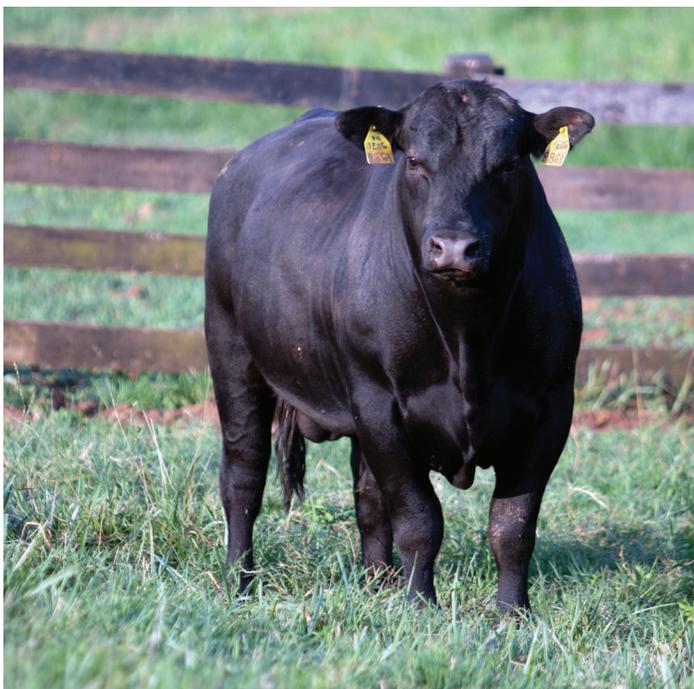


WHAT'S GROWING ON IN VIRGINIA

Virginia Foundation for Agriculture in the Classroom

P.O. Box 27552, Richmond, Virginia 23261

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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.

Program Coordinators: Tammy Maxey, Lynn Black

Editorial Staff: Sara Owens, Pam Wiley

Graphic Designers: Maria La Lima, Patricia Hooten

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



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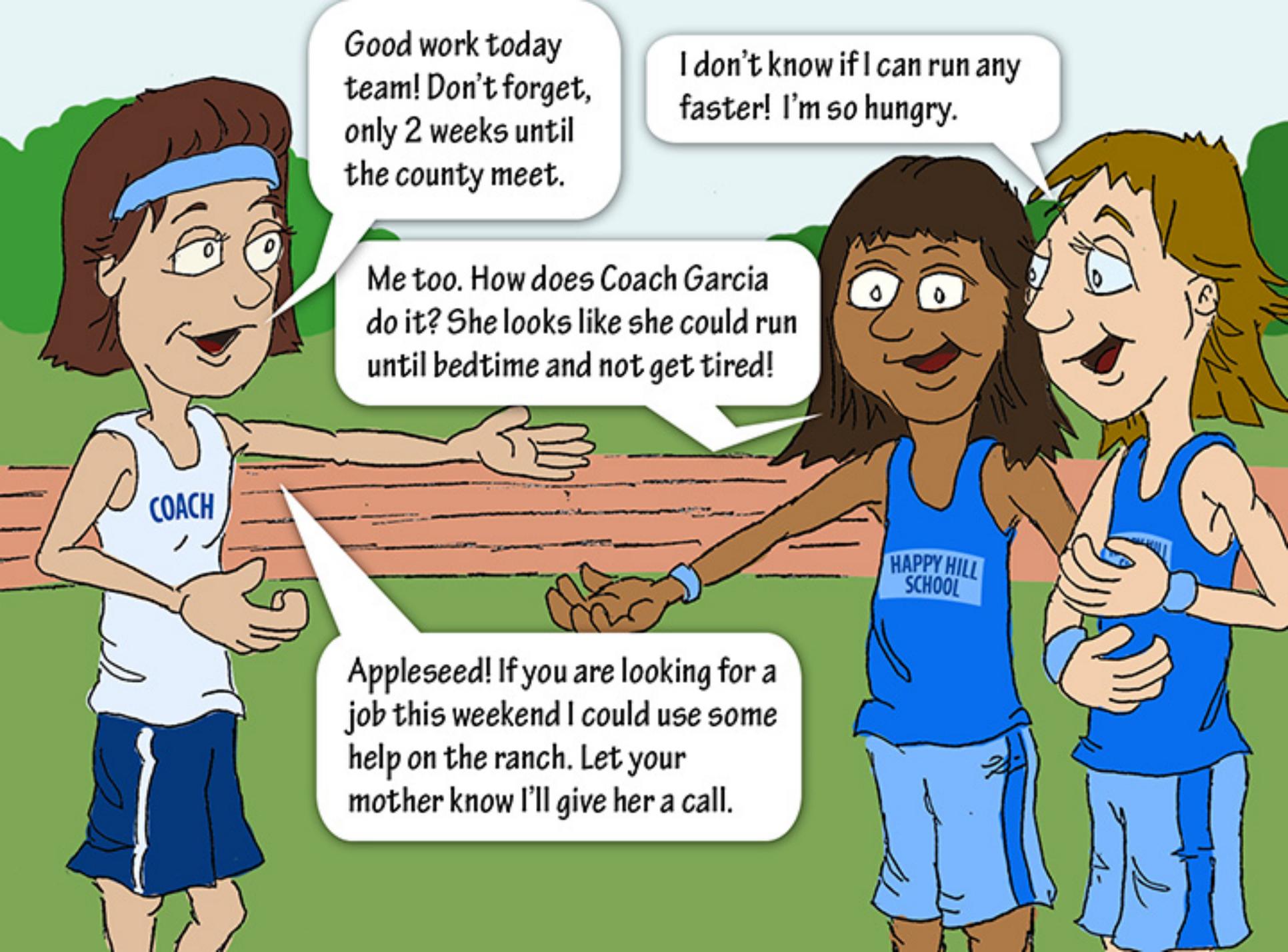


Annie Appleseed in



My
American
Farm

BEEF
V[®]



Good work today team! Don't forget, only 2 weeks until the county meet.

I don't know if I can run any faster! I'm so hungry.

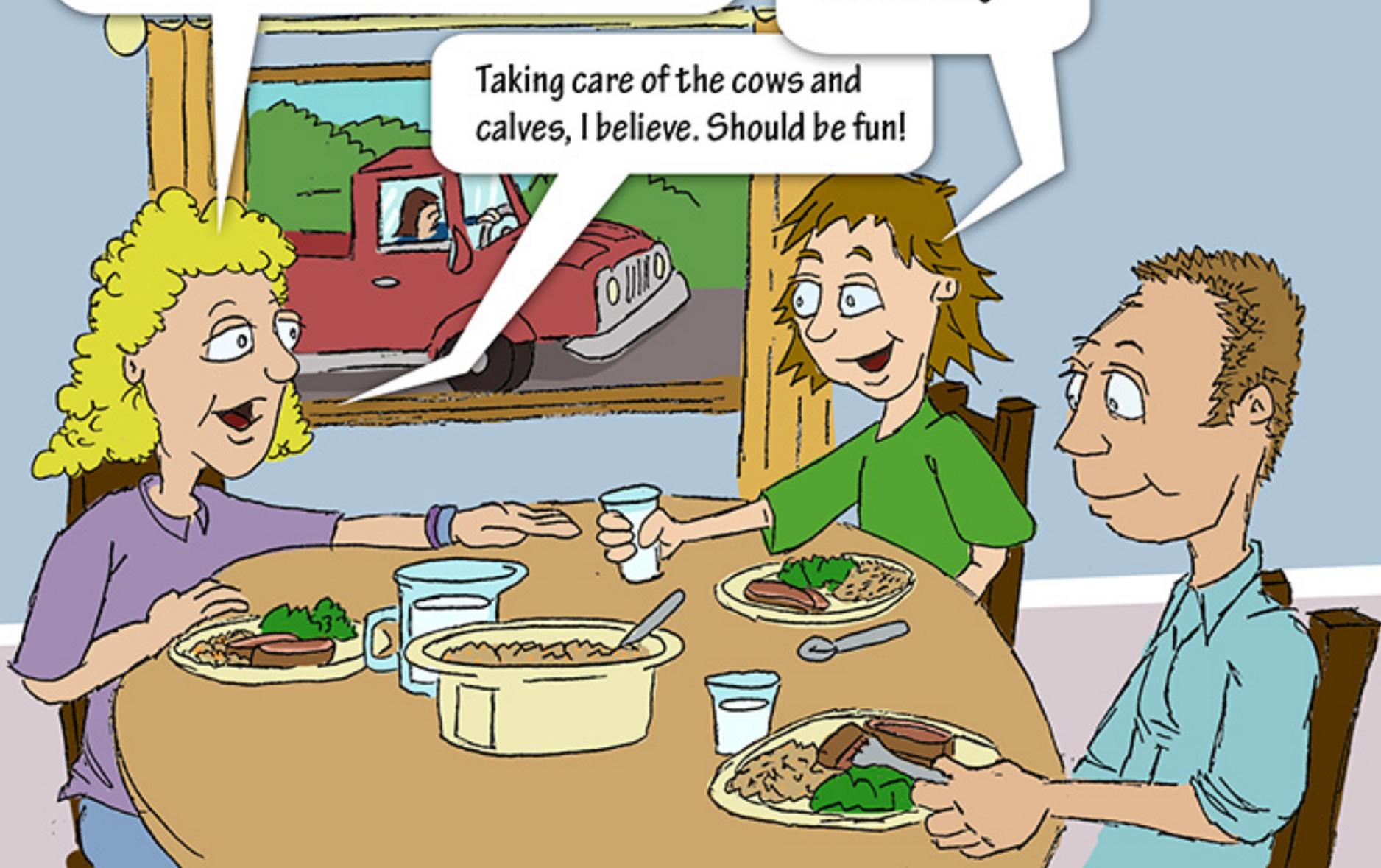
Me too. How does Coach Garcia do it? She looks like she could run until bedtime and not get tired!

Appleseed! If you are looking for a job this weekend I could use some help on the ranch. Let your mother know I'll give her a call.

Coach Garcia called, Annie. She needs some help on the family ranch down the road. Would you like to work there this weekend?

Sure mom. What are we doing?

Taking care of the cows and calves, I believe. Should be fun!

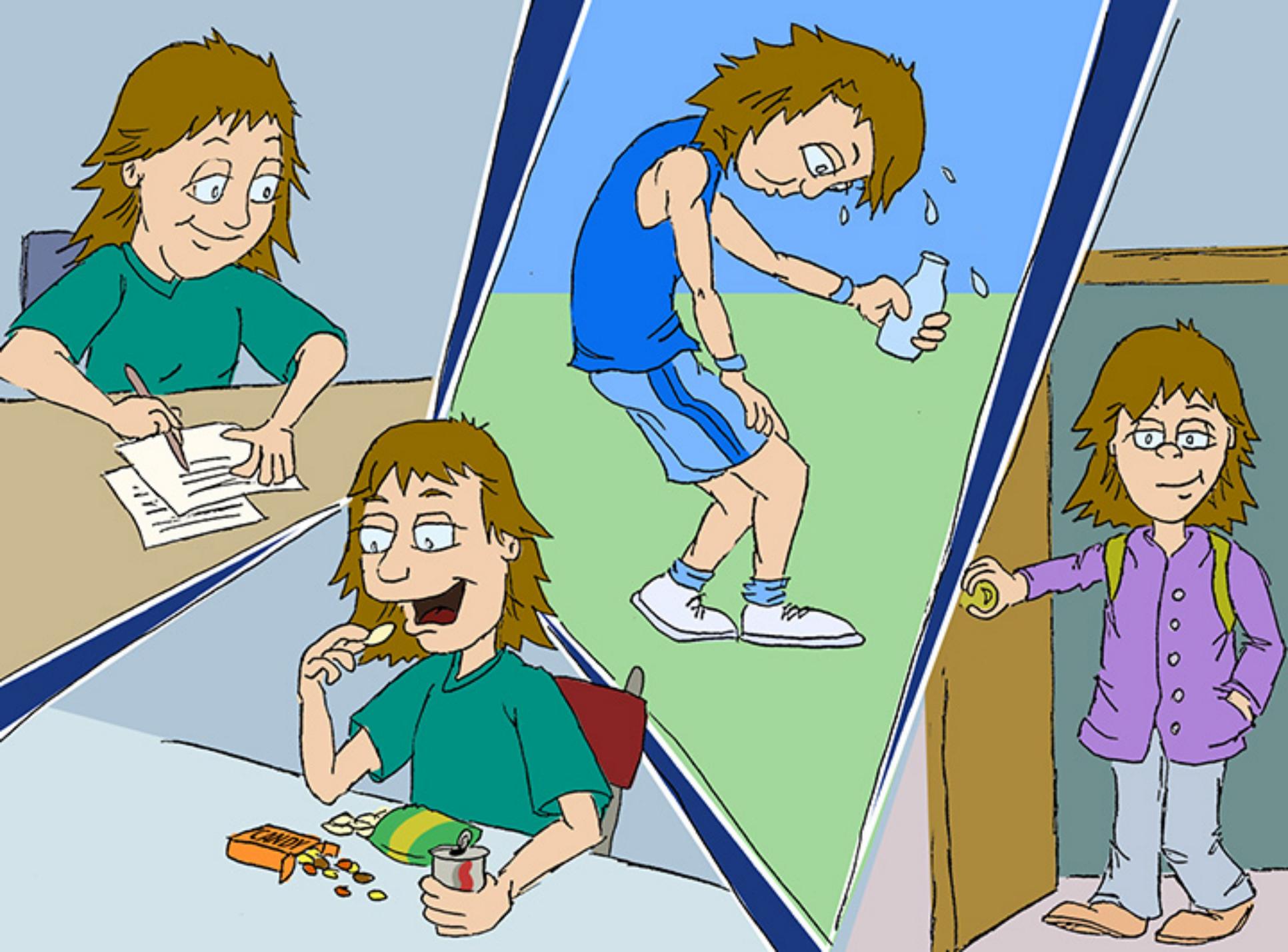


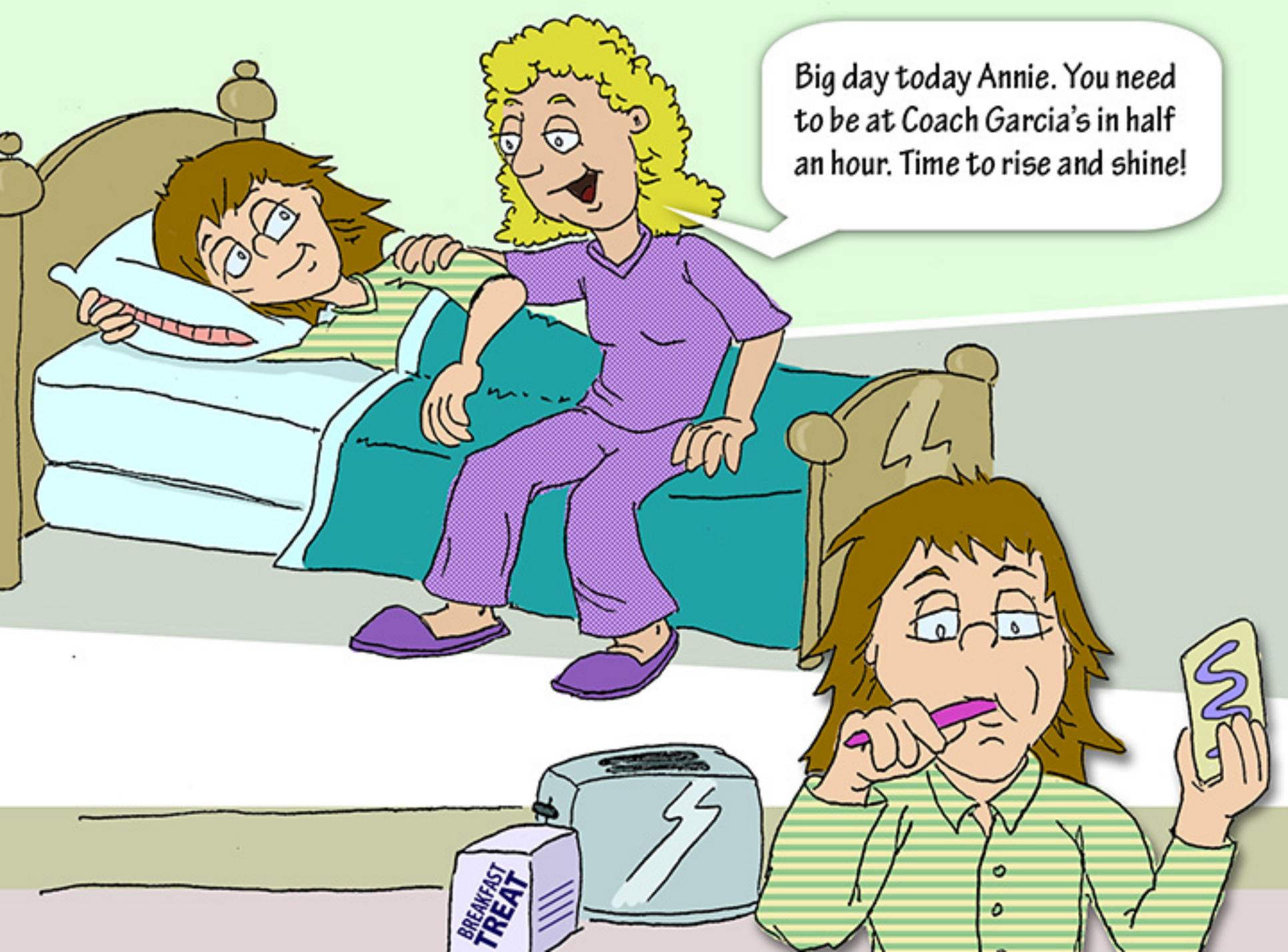
Don't forget to take lunch, Annie.

I'll get something at school mom.
'Gotta run. School bus is coming.

Keep an eye out for
Coach Garcia. She
should be on her
morning run about
now. Have a good
day at school!







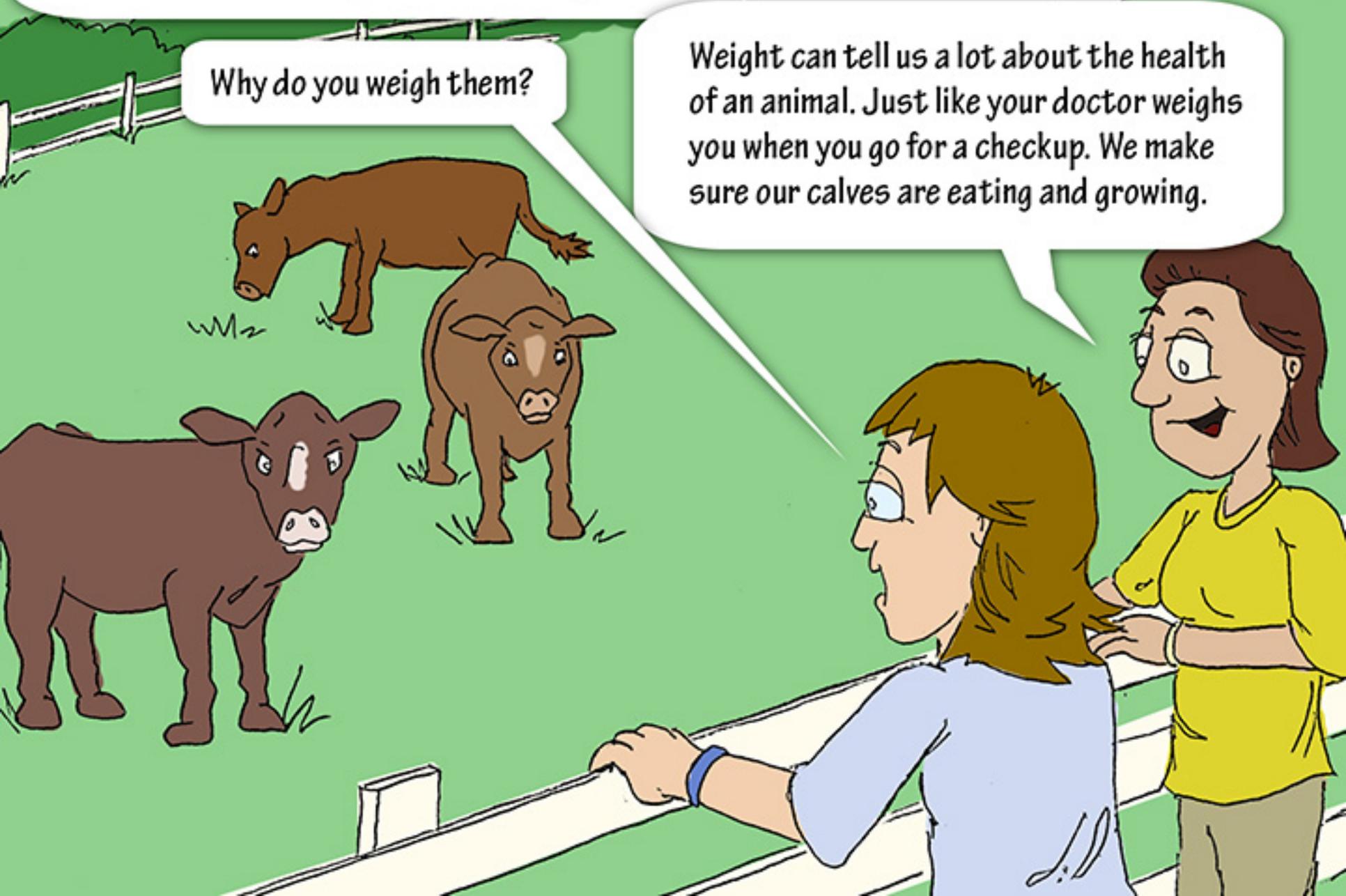
Big day today Annie. You need to be at Coach Garcia's in half an hour. Time to rise and shine!

**BREAKFAST
TREAT**

We are checking and vaccinating calves today Annie. I need you to help as we move the calves through the scale. Our job is to keep them calm and healthy.

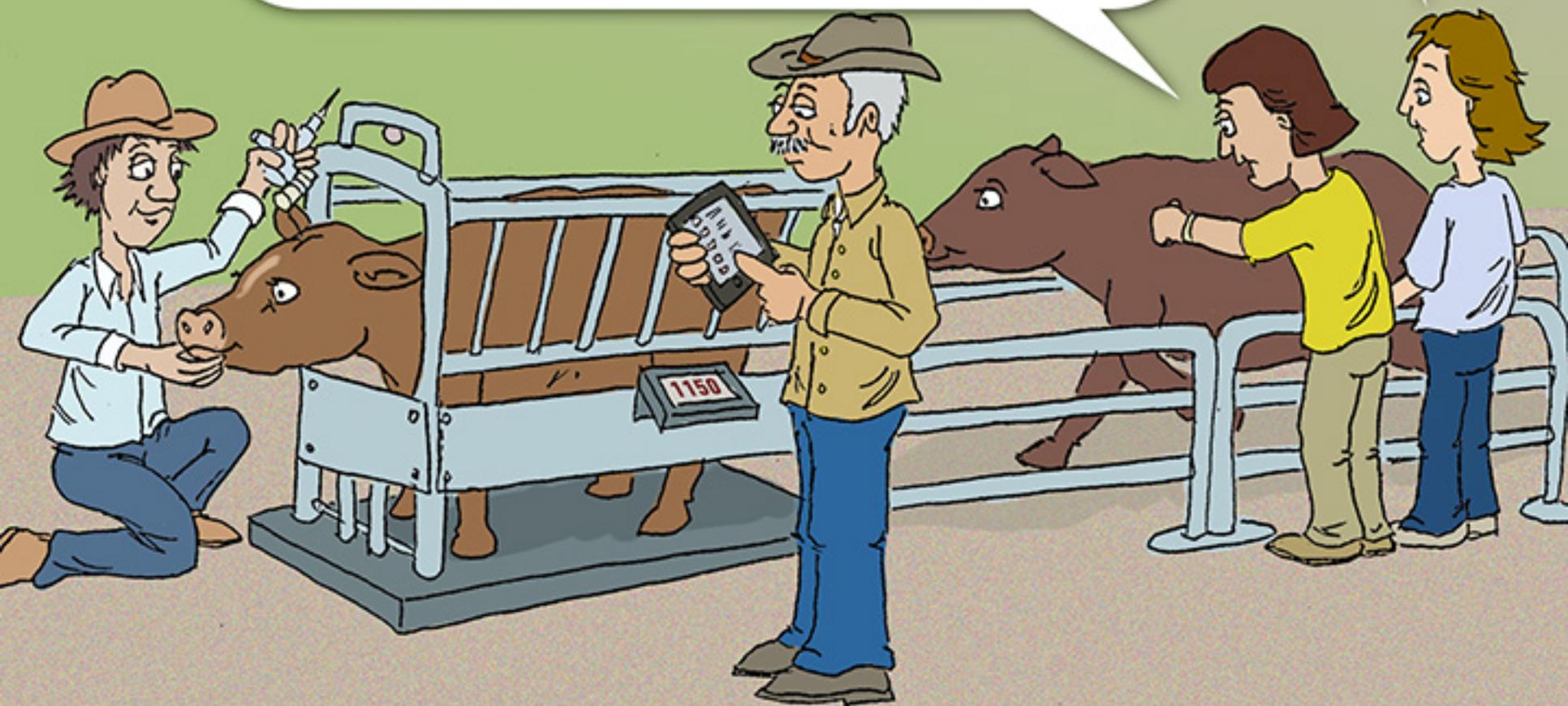
Why do you weigh them?

Weight can tell us a lot about the health of an animal. Just like your doctor weighs you when you go for a checkup. We make sure our calves are eating and growing.



How do you do it, coach? How do you run in the morning, work all day out here, and then coach us?

A healthy diet is the start of a healthy life, Annie.
What did you have for breakfast? What about lunch?
Food is fuel for our day!



Is beef a nutritious option?

You bet. It is easy to fit lean beef into a healthy diet. A 3 oz serving of beef, like we're eating here, is an excellent source of protein, zinc, selenium, niacin, vitamin B6 and vitamin B12 and a good source of iron, riboflavin, phosphorus and choline.

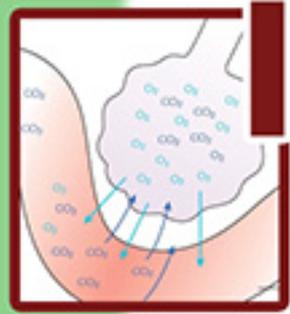
That's a lot to remember. Why is that important?

Let me help you with a trick I learned. Just remember ZIP+B. That stands for Zinc, Iron, Protein and B vitamins!





Zinc helps our immune system. Our immune system is what fights off illness.



Iron helps our move oxygen through our body.



Protein is crucial for muscle growth. It also helps curb hunger, which can help us keep a healthy weight.

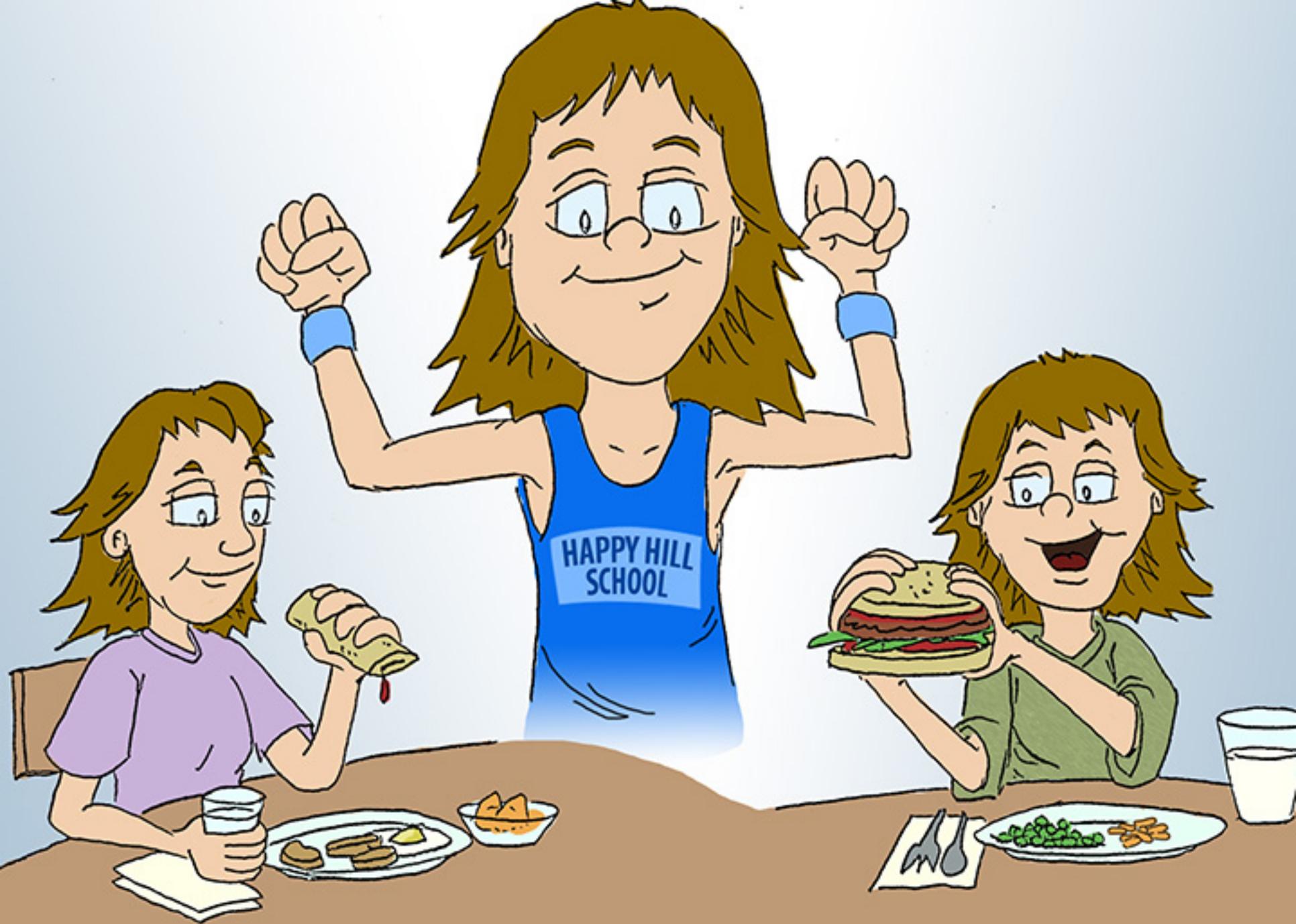


B vitamins are needed for healthy metabolism. Metabolism is our body's process for breaking down food. Its how we get energy!



See you at practice Monday, Annie. And think about what you eat before you come, ok? The big race is next weekend.

Ok Coach. See you then.



A cartoon illustration of two female athletes at a school track meet. They are both wearing blue athletic gear with "HAPPY HILL SCHOOL" printed on the front. The athlete on the left has dark hair in a ponytail and is looking towards the other athlete. The athlete on the right has brown hair in a ponytail and is pointing towards the background. In the background, there is a "START" banner on the left and a crowd of other athletes in various colored uniforms. Two speech bubbles contain their dialogue.

Where is coach? I haven't seen her today.

I don't know.
Maybe she's
racing today too!

Coach! We didn't know you were racing.

I love a good race Annie.
And I'm fueled to finish.
Have you been getting
plenty of nutrients
from your food?

Yes ma'am. Mom has
been helping me eat a
nutritious breakfast,
lunch and dinner.

Well let's go then!





TEAM
BEEF

HAPPY HILL
SCHOOL

FINISH

LINE



The End

**My
American
Farm**



KID-FRIENDLY BEEF RECIPES



Funded by the Beef Checkoff.

FOR MORE GREAT RECIPES, VISIT

www.BeefItsWhatsForDinner.com

GREEK-STYLE BEEF PITA

Stir-fried beef is stuffed into pitas and topped with your family's favorite veggies like cucumbers and olives.



TOTAL RECIPE TIME: 20-25 minutes



SERVES: 4

INGREDIENTS:



1 pound beef
Sirloin Tip Steaks,
cut 1/8 to
1/4 inch thick



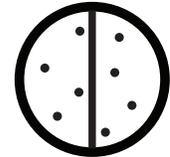
1 tablespoon
lemon pepper



2 to 3 teaspoons
vegetable oil



3/4 cup plain or
seasoned hummus



4 whole wheat
pita breads, cut
crosswise in half

GREEK-STYLE BEEF PITA



INSTRUCTIONS:

1. Stack beef steaks; cut lengthwise in half, then crosswise into 1-inch wide strips. Combine beef and lemon pepper in medium bowl.
2. Heat 2 teaspoons oil in large nonstick skillet over medium-high heat until hot. Add 1/2 of beef; stir-fry 1 to 3 minutes or until outside surface of beef is no longer pink. (Do not overcook.) Remove from skillet. Repeat with remaining beef, adding remaining 1 teaspoon oil to skillet, if necessary.
3. Spread hummus evenly in pita pockets. Fill with equal amounts of beef and toppings, as desired.

FOR MORE GREAT RECIPES, VISIT

www.BeefItsWhatsForDinner.com

SWEET & SLOPPY JOE

This recipe incorporates lots of veggies for a nutritious take on a kid favorite.



TOTAL RECIPE TIME: 35-40 minutes



SERVES: 4

INGREDIENTS:



1 pound Ground Beef (93% lean or leaner)



1 cup diced bell peppers (red, green, yellow or orange)



1/2 cup chopped onion



1 can (8 ounces) tomato sauce



1/2 cup water



1/2 cup dark or golden raisins



2 teaspoons ancho chile powder



1 teaspoon dried oregano leaves



4 whole wheat hamburger buns, split

SWEET & SLOPPY JOE

TEST KITCHEN TIPS

Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.



INSTRUCTIONS:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef, bell pepper and onion; cook 8 to 10 minutes, breaking beef into 3/4-inch crumbles and stirring occasionally. Remove drippings.
2. Stir in tomato sauce, water, raisins, ancho chili powder and oregano; bring to a boil. Reduce heat; simmer, uncovered, 15 to 18 minutes or until sauce thickens slightly, stirring occasionally.
3. Evenly divide beef mixture on bottom half of each bun. Garnish with toppings, as desired; close sandwiches.

Toppings (optional):

Chopped mango, chopped jalapeño, chopped tomato, chopped fresh cilantro, sliced green onion, shredded reduced-fat Cheddar cheese

FOR MORE GREAT RECIPES, VISIT

www.BeefItsWhatsForDinner.com

WRANGLERS BEEF CHILI

Serve this classic chili atop whole wheat noodles and offer kids a variety of toppings.



TOTAL RECIPE TIME: 40-45 minutes



SERVES: 4

INGREDIENTS:



1 pound
Ground Beef
(93% lean or
leaner)



1/2 cup
chopped onion



1 can (15
ounces) pinto
beans, drained
and rinsed



2 cans
(8 ounces)
no-salt added
or regular
tomato sauce



1 cup
frozen corn



1 cup
water



2 teaspoons
chili powder



2 teaspoons
ground cumin



1 teaspoon
garlic powder



1 teaspoon dried
oregano leaves



1/4 teaspoon
pepper



Hot cooked whole
wheat macaroni
(optional)

WRANGLERS BEEF CHILI

TEST KITCHEN TIPS

Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.



INSTRUCTIONS:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef and onions; cook 8 to 10 minutes, breaking beef into 3/4-inch crumbles and stirring occasionally. Remove drippings.
2. Stir in beans, tomato sauce, corn, water, spices and herbs. Bring to a boil. Reduce heat; cover and simmer 20 to 25 minutes, stirring occasionally. Serve over macaroni, if desired. Garnish with toppings, as desired.

Cincinnati-Style Beef Chili: Stir in 1 teaspoon cinnamon with other seasonings in Step 2. Serve over hot cooked whole wheat spaghetti.

Moroccan-Style Beef Chili: Substitute 1 cup frozen peas for corn. Stir in 1 teaspoons pumpkin pie spice with other seasonings in Step 2. Serve over whole hot cooked whole wheat couscous or brown rice.

Toppings (optional):

Crushed baked tortilla chips, chopped green or regular onion, chopped tomato, chopped bell pepper, chopped fresh cilantro, reduced-fat shredded Cheddar cheese, nonfat Greek yogurt

FOR MORE GREAT RECIPES, VISIT

www.BeefItsWhatsForDinner.com

ROCK & ROLL BEEF WRAPS

A colorful way to introduce quinoa to your kids with ranch-seasoned Ground Beef and slaw.



TOTAL RECIPE TIME: 35-45 minutes



SERVES: 4

INGREDIENTS:



1 pound
Ground Beef
(93% lean or
leaner)



1 cup
water



1/3 cup
uncooked
quinoa



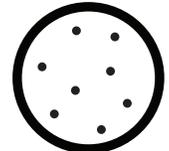
2 tablespoons
dry ranch
dressing mix



1/4 teaspoon
black pepper



2 cups
packaged
broccoli or
coleslaw mix



4 medium
whole grain
or spinach
tortillas
(7 to 8-inch
diameter)

ROCK & ROLL BEEF WRAPS

TEST KITCHEN TIPS

Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.



INSTRUCTIONS:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef; cook 8 to 10 minutes, breaking into 1/2-inch crumbles and stirring occasionally. Remove drippings.
2. Stir in water, quinoa, ranch dressing mix and pepper; bring to a boil. Reduce heat; cover and simmer 10 to 15 minutes or until quinoa is tender. Stir in slaw; cook, uncovered, 3 to 5 minutes or until slaw is crisp-tender, stirring occasionally.
3. Divide beef mixture evenly among tortillas; garnish with toppings, as desired. Fold over sides of tortillas and rolling up to enclose filling.

Toppings (optional):

Apple slices, red bell pepper strips, cucumber slices, carrot slices, sliced almonds or chow mein noodles

FOR MORE GREAT RECIPES, VISIT

www.BeefItsWhatsForDinner.com

POPCORN STEAK BITES

Beefy nuggets cooked in the oven, perfect for little hands to dip as they wish.



TOTAL RECIPE TIME: 35-45 minutes



SERVES: 4

INGREDIENTS:



1 pound beef
Cubed Steaks,
cut 1/2 inch thick



6 cups ridged potato
chips (any flavor)



1/3 cup
all-purpose flour



1 teaspoon
pepper



2 large eggs,
slightly beaten

TEST KITCHEN TIPS

- To crush chips with rolling pin, place chips in large food-safe resealable plastic bag. Close bag securely, leaving one inch opening. Finely crush chips in bag with rolling pin.
- Cooking times are for fresh or thoroughly thawed beef. Cubed steaks should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of cubed steak doneness.

POPCORN STEAK BITES



INSTRUCTIONS:

1. Cut beef steaks into 1X1-inch pieces; set aside.
2. Place chips in bowl of food processor. Cover; pulse on and off to form fine crumbs.
3. Combine pepper and flour in a shallow bowl. Place crushed chips and eggs into two additional shallow bowls. Dip steak pieces in flour, then into egg, then into crushed chips, turning to coat all sides and pressing chips onto steak pieces.
4. Spray rack of broiler pan with nonstick cooking spray. Place beef bites on rack in broiler pan so surface of beef is 6 inches from heat. Broil 8 to 10 minutes or until 160°F. Serve immediately with dipping sauces, as desired.

Dipping Sauces:

Ranch or Thousand Island dressing, mustard, ketchup or barbecue sauce

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BUFFALO-STYLE BEEF TACOS

Family favorite tacos get a flavor update with wing sauce, blue cheese, celery and carrots.



TOTAL RECIPE TIME: 25-30 minutes



SERVES: 4

INGREDIENTS:



1 pound Ground Beef (95% lean)



1/4 cup cayenne pepper sauce for Buffalo wings



8 taco shells



1 cup thinly sliced lettuce



1/4 cup reduced fat or regular prepared blue cheese dressing



1/2 cup shredded carrot



1/3 cup chopped celery



2 tablespoons chopped fresh cilantro



Carrot and celery sticks or cilantro sprigs (optional)

BUFFALO-STYLE BEEF TACOS

TEST KITCHEN TIPS

Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.



INSTRUCTIONS:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef; cook 8 to 10 minutes, breaking into small crumbles and stirring occasionally. Remove from skillet with slotted spoon; pour off drippings. Return to skillet; stir in pepper sauce. Cook and stir 1 minute or until heated through.
2. Meanwhile, heat taco shells according to package directions.
3. Evenly spoon beef mixture into taco shells. Add lettuce; drizzle with dressing. Top evenly with carrot, celery and cilantro. Garnish with carrot and celery sticks or cilantro sprigs, if desired.

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SPY THAI BEEF

Peanut butter, soy sauce, ginger and garlic introduce ethnic flavors to picky palates.



TOTAL RECIPE TIME: 30-35 minutes



SERVES: 4

INGREDIENTS:



1 pound Ground Beef
(93% lean or leaner)



1/4 cup water



3 tablespoons
reduced-fat creamy
peanut butter or
regular sunflower
seed butter



2 tablespoons
reduced-sodium
soy sauce



2 tablespoons
fresh lime juice



3/4 teaspoon
garlic powder



3/4 teaspoon
ground ginger



1/8 to 1/4
teaspoon crushed
red pepper



Baked wonton
wrappers
(optional)

SPY THAI BEEF

TEST KITCHEN TIPS

Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.



INSTRUCTIONS:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef; cook 8 to 10 minutes, breaking into 1/2-inch crumbles and stirring occasionally. Remove drippings.
2. Meanwhile, combine water, peanut butter, soy sauce, lime juice, garlic powder, ground ginger and red pepper.
3. Stir peanut butter mixture into beef. Continue to cook over medium heat 2 to 3 minutes or until heated through, stirring occasionally.
4. Evenly divided beef mixture over six wonton triangles, if desired. Garnish with toppings, as desired.

Toppings (optional):

Red bell pepper strips, shredded carrots, cucumber slices, sliced green onion, sliced fresh pea pods, sliced basil or cilantro leaves, shelled edamame, pickled ginger, lime wedges

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MU SHU STEAK & APPLE WRAPS

Hand-held and perfectly portable, these wraps are great on the go.



TOTAL RECIPE TIME: 25-30 minutes



SERVES: 4

INGREDIENTS:



4 beef Tri-Tip Steaks,
cut 1 inch thick
(about 4 ounces each)



3/4 teaspoon
ground cinnamon



1/4 teaspoon
pepper



1/4 cup
hoisin sauce



1 tablespoon honey



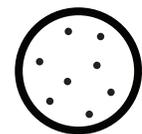
Salt (optional)



3 cups tri-color
coleslaw mix (with
green cabbage, red
cabbage & carrots)



1 Granny Smith
apple, peeled and
thinly sliced



8 medium whole
wheat flour tortillas
(8 to 10-inch
diameter), warmed

MU SHU STEAK & APPLE WRAPS



INSTRUCTIONS:

1. Combine cinnamon and pepper; press evenly onto beef steaks. Heat large nonstick skillet over medium heat until hot. Place steaks in skillet; cook 9 to 12 minutes for medium rare to medium doneness, turning occasionally.
2. Combine hoisin sauce and honey in large bowl. Carve steaks into thin slices; season with salt, if desired. Add steak slices, coleslaw mix and apple to hoisin mixture; toss to coat.
3. Place equal amounts of beef mixture down center of each tortilla, leaving 1-1/2-inch border on right and left sides. Fold bottom edge up over filling. Fold right and left sides to center, overlapping edges; secure with wooden picks, if necessary.

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PERSONAL BEEF PIZZAS

Made exactly as you like it, these individual pizzas are fun to make together.



TOTAL RECIPE TIME: 25-30 minutes



SERVES: 4

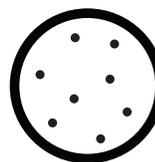
INGREDIENTS:



1 recipe Italian-Style Beef Sausage (recipe follows)



1-1/2 cups pizza sauce



4 round thin sandwich breads, any variety, split



1/2 cup shredded mozzarella cheese

Toppings (optional):

Sliced black or green olives, sliced red or yellow bell peppers or sliced red onions

PERSONAL BEEF PIZZAS



INSTRUCTIONS:

1. Prepare Italian-Style Beef Sausage. Stir in pizza sauce; cook 2 to 3 minutes or until heated through, stirring frequently. Keep warm and set aside.
2. Place sandwich thins, cut sides up, on rack of broiler pan. Spoon equal amounts of beef mixture on each bread half. Evenly sprinkle with cheese and toppings, as desired.
3. Place pizzas on rack of broiler pan so surface of cheese is 3 to 4 inches from heat. Broil 4 to 5 minutes or until cheese is melted and bubbly.

Italian-Style Beef Sausage: Combine 1 pound Ground Beef, 1 teaspoon fennel seed, 1/2 teaspoon salt, 1/4 teaspoon coriander, 1/4 teaspoon garlic powder, 1/4 teaspoon paprika, 1/4 teaspoon black pepper and 1/8 to 1/4 teaspoon crushed red pepper in large bowl, mixing lightly but thoroughly. Heat large nonstick skillet over medium heat until hot. Add beef mixture; cook 8 to 10 minutes, breaking into 1/2-inch crumbles and stirring occasionally. (Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of ground beef doneness.) Makes 2-1/2 cups crumbles

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BEEF & CHEESE TORTILLA TOWERS



TOTAL RECIPE TIME: 25-30 minutes



SERVES: 4

INGREDIENTS:



1 pound Ground Beef (95% lean)



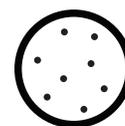
1 jar (16 ounces) thick-and-chunky salsa



3/4 cup canned black beans, rinsed, drained



1/2 teaspoon ground cumin



7 small whole wheat tortillas (6 to 7-inch diameter)



1 cup shredded reduced-fat Mexican cheese blend



Chopped fresh cilantro (optional)

Cantaloupe-Mango Salsa:



1 cup coarsely chopped ripe mango



1 cup coarsely chopped cantaloupe



1/8 to 1/4 teaspoon crushed red pepper

BEEF & CHEESE TORTILLA TOWERS

TEST KITCHEN TIPS

Cooking times are for fresh or thoroughly thawed Ground Beef. Ground Beef should be cooked to an internal temperature of 160°F. Color is not a reliable indicator of Ground Beef doneness.



INSTRUCTIONS:

1. Heat large nonstick skillet over medium heat until hot. Add Ground Beef; cook 8 to 10 minutes, breaking into 3/4-inch crumbles and stirring occasionally. Remove drippings. Stir in salsa, beans and cumin. Cook 3 to 5 minutes or until heated through and most of liquid has evaporated. Remove from heat.
2. Heat oven to 350°F. Spray baking sheet with nonstick cooking spray. Place 2 tortillas in single layer on pan. Spoon generous 1/2 cup beef mixture on each tortilla; sprinkle each with 2 tablespoons cheese. Repeat layering of tortillas, beef mixture and cheese twice. Sprinkle remaining cheese over tops of tortilla towers. Cut 8 small stars from remaining tortilla with cookie cutter; arrange on towers. Bake in 350°F oven 12 to 15 minutes or until heated through and cheese melts.
3. Meanwhile, combine salsa ingredients in small bowl. Set aside.
4. Cut each tortilla tower into 4 wedges. Garnish with cilantro, if desired. Serve with fruit salsa.

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