





20

MINUTES

# Health



FOOD AND FARM FACTS • CONSUMERS

## HOW DO FARMERS AND RANCHERS CARE FOR FARM ANIMALS?



Students identify various data pieces that are important to animal health and learn about technologies used in the agriculture industry.

*Standards: Students will comprehend concepts related to health promotion and disease prevention to enhance health (1.5.4)*

*Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors (2.5.6)*

### MATERIALS:

- *Food and Farm Facts* (pages 6 and 7)
- Colored beads, assorted
- String
- Scissors

### ACTIVITY SEQUENCE:

1. Ask students to think about the different types of information a doctor might use to keep us healthy (e.g. listen to your heart, ask how you feel, take your temperature, ask if you are eating healthy, ask if you are drinking lots of water, ask if you are exercising, etc.).
2. Share that it is just as important to regularly checkup on animals' health too. To do this for dairy cattle, farmers use a tracker that goes around their neck similar to a necklace
3. Have students read *Food and Farm Facts* on pages 6 and 7 and come up with a list of different pieces of data that is collected to check if the dairy cow is healthy.
  - a. Examples could include: Steps counted, rumination (chewing cud), etc.
4. Once students share the examples listed in the text, add that farmers can also track the animal's weight and food intake with this "necklace."
5. Have students grab four different colored beads and cut a piece of string that is two feet long.
6. For each differently colored bead, assign one of the data pieces on your list. For example:
  - a. Steps counted = Red
  - b. Rumination = Blue
  - c. Weight = Green
  - d. Food intake = Yellow
7. Have students create their own necklace with the differently colored beads, talking about why each is important to dairy cattle's health.
8. Discuss as a class how just as we need trackers to keep us healthy as humans, cows are no different.

### DISCUSSION:

- Why is it important that farmers keep track of pieces of data relating to their animals' health?
- How does technology help farmers take better care of their animals?

## Learn More!

Discover how farmers and ranchers care for their farm animals by reading the *My Little Ag Me* book, "The Cow Conundrum."





# English Language Arts

FOOD AND FARM FACTS • CONSUMERS

## WHAT WOULD THE FARMER SAY?

Students practice intrapersonal skills through the modeling of conversations between an interviewer and a farmer/rancher.

*Standards: Text Types and Purposes*

- (CCSS.ELA-LITERACY.W.4.1)
- (CCSS.ELA-LITERACY.W.4.1.B)

### MATERIALS:

- *Food and Farm Facts* (pages 6 and 7)
- Index cards (one per student)  
\*On half the index cards write "Farmer" and the other write "Interviewer".
- Writing utensil (one per student)
- Paper (one per student)

### ACTIVITY SEQUENCE:

1. Have students read *Food and Farm Facts* on pages 6 and 7 about how farmers and ranchers work hard to care for their animals.
2. Then, pair up students.
3. Give one student in each pair a card that says "Farmer", and the other student a card that says "Interviewer."
4. Have the interviewer ask the farmer questions specific to their work.
  - a. Suggested questions: What do dairy farmers do to make sure their cows are taken care of? Why do pig farmers use antibiotics? What do farmers do to keep their animals warm in the winter? Do farmers add hormones to turkey feed?

5. Once students are finished answering/asking questions, have them switch roles.
6. Once pairs have taken turns being the interviewer and interviewee, have students write a paragraph about how farmers and ranchers care for their animals.

### DISCUSSION:

- When you were the interviewer, what kinds of questions did you ask?
- What did you want to know about agriculture?
- As a farmer, what was important for you to share with the interviewer?

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## Learn More!

Discover the truths behind common misconceptions about agriculture by playing My American Farm's game, "Fact or Fairytale" on [MyAmericanFarm.org](http://MyAmericanFarm.org)





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MINUTES

# Math

## FOOD AND FARM FACTS • CONSUMERS

### FIND THE FARMER

Students will apply mathematical concepts and skills to examine the percentage of Americans who are involved in farming and production agriculture.

*Standards: Solve problems involving measurement and conversion of measurements*

- (CCSS.MATH.CONTENT.4.MD.A.2)



#### MATERIALS:

- Food and Farm Facts (page 4)
- Whiteboard or writing space

#### ACTIVITY SEQUENCE:

1. Ask students about whether they use food, clothes, fuel, etc. on a regular basis. \*Note that everyone needs agriculture to live.
2. Share that only 2% of the U.S. population is involved in farming. Ask students: What does it mean when we say that? Is that a lot of people or a small amount?
3. Share with students that today we are going to calculate how many people in the class would be farmers and responsible for feeding the rest of the class every day.
4. On a whiteboard, calculate how many students out of the classroom would represent 2% of the population to feed everyone in the room.
  - a. We can do this by multiplying the number of students in the class by 2% (or 0.02) and then taking that number and subtracting it from the number of students.
  - b. For example, 35 students in the class  $\times 2\% = 0.7$ ,  $35 - 0.7 = 34.3$ 
    - i. Meaning that less than one person in the class is responsible for feeding every student in the class daily.
5. Have students discuss the questions below.

#### DISCUSSION:

- How many farmers are there compared to the rest of the population?
- What does this tell you about the amount of food a farmer has to produce?
- The global population is expected to continue growing — how will this affect the ratio of farmers to the rest of the population?

### Learn More!

Explore different careers available in agriculture with American Farm Bureau Foundation's "When I Grow Up: Discover Ag Careers" resource kit on [agfoundation.org/free-resources](http://agfoundation.org/free-resources)



# English Language Arts

FOOD AND FARM FACTS • CONSUMERS

## AGRINFLUENCE!

Students practice their informative writing skills while learning more about agriculture.

*Standards: Research to Build and Present Knowledge*  
• (CCSS.ELA-LITERACY.W.5.7)

### MATERIALS:

- *Food and Farm Facts* (page 5)
- Computer access

### ACTIVITY SEQUENCE:

1. In your community library, school computer lab or classroom, have students read an article from at least three of the blogs/websites of their choice listed on page 5 of *Food and Farm Facts*.

- "Best Food Facts": [bestfoodfacts.org](http://bestfoodfacts.org)
- "Fill Your Plate Blog": [fillyourplate.org/blog](http://fillyourplate.org/blog)
- "Food Dialogues Blog": [fooddialogues.com/blog](http://fooddialogues.com/blog)
- "Food Insight": [foodinsight.org/blogs](http://foodinsight.org/blogs)
- "Food Integrity Blog": [foodintegrity.org/news-blog/cfi-blog](http://foodintegrity.org/news-blog/cfi-blog)
- "GMA Blog": [gmaonline.org/blog](http://gmaonline.org/blog)

2. After the reading is complete, have students create their own social media "account" name, draw a picture of their farm, and write a paragraph that they would use to caption their picture in a post. The post should focus on something they learned from one of the sources.

### DISCUSSION:

- How did you decide which agricultural topic to blog about?
- What reasons would a farmer have for sharing what they do with others?

## Learn More!

Check out the Ag Literacy Catalog for great learning activities aligned to the "Pillars of Agricultural Literacy" at [agfoundation.org/ag-lit-catalog](http://agfoundation.org/ag-lit-catalog)





# Science

## FOOD AND FARM FACTS • CONSUMERS

### COMPOST CUPS

Students will create their own compost cups to learn more about food waste and ways they can reduce their own individual food waste.

Standards: *Earth's Systems*

- (MS-ESS2-1)

#### MATERIALS:

- *Food and Farm Facts* (page 9)
- Soil
- Water
- Compostable materials (e.g., apple cores, coffee grounds, orange peels, etc.)
- 16 oz. plastic cups
- Plastic wrap
- Rubber bands

#### ACTIVITY SEQUENCE:

1. Discuss with students what they think the term "food waste" means. (Food waste is food that is thrown away uneaten.)
2. Ask them what ideas they have for how they can lessen the amount of food waste. What can they do with scraps from a meal instead of throwing them in the trash?
3. Have students read the "How Can You Help" section on page 9 of *Food and Farm Facts*.
4. With students' leftovers from lunch or brought in kitchen scraps (no meat or dairy) have students create their own compost in cups.

5. Have each student grab a plastic cup and add  $\frac{1}{4}$  cup of soil, 1 tablespoon of water and their compostable materials.
6. Cover the cup with plastic wrap and secure with a rubber band.
7. Shake the cups and place them in a warm, sunny spot like a windowsill.
8. Share with students the following words and definitions.
  - a. Ecology is the science of living things, the environment they live in and how the two interact.
  - b. Decomposition is the process by which organic material is broken down by bacteria and other microorganisms. This looks like rotting or decay.

#### DISCUSSION:

- How does ecology and decomposition relate to food waste and composting?
- What problems might be caused by food waste?
- How does composting help to reduce food waste?
- What steps can you take to reduce your individual food waste?



### Learn More!

Sharpen critical and creative thinking through ag-related hands on STEM activities with Purple Plow's Puzzlers found at [purpleplow.org/puzzlers](http://purpleplow.org/puzzlers)



**60**  
MINUTES

# Science



FOOD AND FARM FACTS • MODERN FARMERS

## FOOD IS FOR TASTING, NOT WASTING

Students identify which foods are compostable, recyclable, and waste.

*Standards: Human Impact*  
• (MS-ESS3-3)

### MATERIALS:

- Food and Farm Facts (page 9)
- Three buckets
- Food waste and disposables from a class lunch or party
- Gloves



### ACTIVITY SEQUENCE:

1. At a class party or regular lunch break, take three buckets to the lunch area/front of classroom.
2. Explain that each bucket is for one of the following items:
  - a. Compost
  - b. Recyclable Items
  - c. Waste
3. Once students are finished eating, ask them to fill each bucket accordingly.
4. Bring buckets back from lunch/class party analyze results.
5. Discuss with students each bucket and reflect on how much is in the bucket after the class party or lunch.
6. Strategize ways to reduce food waste in the classroom and at home and make it a challenge!

### DISCUSSION:

- Which bucket has the most scraps in it?
- Why do some buckets fill up faster than others?
- What can we do to reduce the amount of food that is wasted in our school? In our homes?

## Learn More!

Check out STEM Maker Space challenges at [purpleplow.org/challenges](http://purpleplow.org/challenges)





# Math



## FOOD AND FARM FACTS • CONSUMERS

### LUNCH MONEY

Students compare how much income goes towards food in the U.S. versus other countries.

Standards: Represent and solve problems involving addition and subtraction.  
• (CCSS.MATH.CONTENT.2.OA.A.1)

#### MATERIALS:

- Food and Farm Facts (page 8)
- Calculators
- Pencils
- Paper

#### ACTIVITY SEQUENCE:

1. Have students read *Food and Farm Facts* page 8
2. Ask students how they feel about living in a country that spends less of their income on food than other countries.
3. Have students calculate the dollar value that would be spent on food out of \$50 in the U.S., Brazil, China, Mexico, Vietnam, and Bangladesh.
  - U.S.: \$4.50
  - Brazil: \$8.50
  - China: \$11
  - Mexico: \$14
  - Vietnam: \$16
  - Bangladesh: \$27

4. Have students calculate the money left from the initial \$50 after food has been purchased.
  - U.S: \$45.50
  - Brazil: \$41.50
  - China: \$39
  - Mexico: \$36
  - Vietnam: \$34
  - Bangladesh: \$23



5. Encourage students to consider the difference in money remaining after food has been paid for in each country out of the same budget.

#### DISCUSSION:

- How much more money was left over in the U.S. compared to Bangladesh?
- How do you think this affects the way that money is spent in each country?
- What are some ways that farming affects our food prices in the U.S.?



U.S.

9%



BRAZIL

17%



CHINA

22%



MEXICO

28%



VIETNAM

32%



BANGLADESH

54%





60

MINUTES

# Social Science



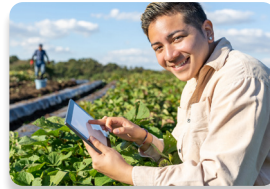
FOOD AND FARM FACTS • MODERN FARMS

## DISTINGUISHING DEMOGRAPHICS

Students learn more about agriculture in their state as well as compare different levels of agricultural production across the U.S.

*Standards: Key Ideas and Details, Integration of Knowledge and Ideas*

- (CCSS.ELA-LITERACY.RH.6-8.1)
- (CCSS.ELA-LITERACY.RH.6-8.7)



### MATERIALS:

- *Food and Farm Facts* (page 27)
- Student laptops or computer lab
- Paper (one per student)
- Colored pencils or crayons
- Black and white U.S. outline map

### ACTIVITY SEQUENCE:

1. Break students up into five teams. Each team taking a different region of the U.S.
  - a. West = Colorado, Wyoming, Montana, Idaho, Washington, Oregon, Utah, Nevada, California, Alaska, Hawaii
  - b. Midwest = Ohio, Indiana, Michigan, Illinois, Missouri, Wisconsin, Minnesota, Iowa, Kansas, Nebraska, South Dakota, North Dakota
  - c. Southwest = Texas, Oklahoma, New Mexico, Arizona
  - d. Southeast = West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Arkansas, Louisiana, Florida

- e. Northeast = Maine, Massachusetts, Rhode Island, Connecticut, New Hampshire, Vermont, New York, Pennsylvania, New Jersey, Delaware, Maryland
2. Within groups, have students research how many farms are currently in each state within their region. Record results on paper or in a Word document.
  3. Once data is collected for each state, students share their findings with classmates.
  4. As a class, color in a map of the U.S., depending on how many farms were in each state.
    - i. Orange = 1-40,000 farms
    - ii. Yellow = 40,001-80,000 farms
    - iii. Purple = 80,001-120,000 farms
    - iv. Green = 120,001-250,000 farms

### DISCUSSION:

- Which state had the most/least farms?
- What parts of the country has the most/least farms? Why is that?
- Who are farm operators?

## Learn More!

Find some of the best links for news about agriculture on [agfoundation.org/resources/ag-links](http://agfoundation.org/resources/ag-links)



AMERICAN FARM BUREAU  
FOUNDATION  
FOR AGRICULTURE



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MINUTES

# Math



FOOD AND FARM FACTS • MODERN FARMERS

## HOW WILL FARMERS MEET THE DEMAND OF A GROWING POPULATION?

Students calculate the number of U.S farms it would take to feed 1.3 billion people.

*Standards: Solve problems involving measurement and conversion of measurements*

- (CCSS.MATH.CONTENT.4.MD.A.1)
- (CCSS.MATH.CONTENT.4.MD.A.2)

### MATERIALS:

- *Food and Farm Facts* (pages 10 and 11)
- Pencils
- Paper

### ACTIVITY SEQUENCE:

1. Write 7.8 billion. Have students calculate the difference between the current population of 7.8 billion and the estimated 2050 population of 9.1 billion.
  - a.  $9.1 \text{ billion} - 7.8 \text{ billion} = 1.3 \text{ billion}$
2. Ask students to identify the number of people fed by an American farm on page 10 of the *Food and Farm Facts* booklet (172).
3. Have students calculate how many more U.S. farms it would take to feed 1.3 billion more people.
  - a.  $1,300,000,000 / 172 = 7,558,139.5 \text{ farms}$
4. Ask students if they think it is possible to establish 7 million more farms.
  - a. Listen for: "There's limited land available to farm, we need more farmers (the average age

is increasing), cities are expanding, many areas are protected for wildlife conservation, farming can be expensive to start."

5. Ask students if there are other ways we can produce enough food to feed the larger population without establishing more than 7 million new farms.
  - a. Listen for: "Make more food on the farms that we already have."
  - b. Use this opportunity to discuss the value and necessity of increasing farm yields.

### DISCUSSION:

- How can farmers meet the demand of a growing population?
- What ideas can you come up with that would help farmers produce more food?

### Learn More!

Learn about some of your favorite agricultural topics with Ag Mags covering precision agriculture, food waste, plant breeding, beef and so much more! Ag Mags are available at [dmsfulfillment.com/FarmBureau](https://dmsfulfillment.com/FarmBureau)





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MINUTES

# Math



## FOOD AND FARM FACTS • MODERN FARMERS

### WHAT FARMERS & RANCHERS GROW

Students will practice writing out large numbers and placing them in sequential order.

*Standards: Understand ordering and absolute value of rational numbers*  
• (CCSS.MATH.CONTENT.6.NS.C.7)

#### MATERIALS:

- Food and Farm Facts (page 11)
- Whiteboard or writing space
- Pencils
- Paper



#### ACTIVITY SEQUENCE:

1. Read *Food and Farm Facts* page 11 and understand the chart from "See What Farmers & Ranchers Grow".
2. Take commodities and quantities from the "See What Farmers & Ranchers Grow" chart and mix up order. For example:
  - a. oilseeds 270.0 billion lbs., poultry 50.4 billion lbs., eggs 13.3 billion lbs., hay and silage 699.9 billion lbs., etc.
3. Have students write out, in words, each number for the commodities listed on the whiteboard. For example:
  - a. grains = nine hundred, fifty-five billion, nine hundred million.  
eggs = thirteen billion, three hundred million
4. Then have students write out the number in digit form. For example:
  - a. grains = 956,000,000,000  
eggs = 13,300,000,000
5. With the numbers in digit form, have students then order commodities from greatest to least.

#### DISCUSSION:

- Why does the U.S. grow so much grains? Does it only go to food production?
- Why does the U.S. grow so much hay and silage?



### Learn More!

Challenge students' knowledge on agriculture by playing My American Farm's game, "Ag Across America" on [MyAmericanFarm.org](http://MyAmericanFarm.org)





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MINUTES

# Science

## FOOD AND FARM FACTS • PRODUCTION

### BEFORE & AFTER

Students will learn about how products they use every day come from agricultural commodities while also building communication skills.



*Standards: Engineering Design*

- (3-5-ETS1-1)

#### MATERIALS:

- Food and Farm Facts (page 26)
- Paper
- Writing utensils
- Computer
- Printer



#### ACTIVITY SEQUENCE:

1. Have a commodity printed on a sheet of paper that creates a plant or animal by-product. The simpler the printed picture, the better. For example:
  - a. tree = timber, corn = soda, cattle = footballs
2. Students partner up, one holding the paper with the printed commodity (not revealing the photo to the partner) and the other student with a writing utensil and blank sheet of paper.
3. Both students turn back to back.
  - a. Student that has the commodity printed will begin describing the object without naming it — they are not allowed to tell their partner the name of the shape and can only describe the picture.
  - b. The other student must try to draw the picture they are describing to try and get as close to the original picture as possible.
4. Allow three to five minutes to complete the picture and to compare the commodity with the actual drawing.
5. Debrief:
  - a. Did your drawing turn out exactly like the picture?
  - b. Was it hard to explain what to draw, without saying the actual commodity?
  - c. Explain that just as our pictures look different from the original commodity, plant and animal by-products look different from their original form too. A piece of paper looks very different from a growing tree. Soda looks very different from an ear of corn.
6. Brainstorm and design a new plant or animal-based by-product and share discoveries with the class.

#### DISCUSSION:

- What other by-products come from plants and animals?
- Why might it be beneficial to use many different parts of an animal or plant in different products?

### Learn More!

Got questions about where your food comes from? Watch Kids' Questions About Agriculture videos on the American Farm Bureau Foundation for Agriculture YouTube channel.

# English Language Arts

FOOD AND FARM FACTS • PRODUCTION

## AGRICULTURE IS MORE THAN FOOD

Students will practice their artistic and creative skills while identifying different products that are agriculturally related.

*Standards: Production and Distribution of Writing*

- (CCSS.ELA-LITERACY.W.4.4)

### MATERIALS:

- *Food and Farm Facts* (pages 26)
- Paper (one per student)
- Colored pencils

### ACTIVITY SEQUENCE:

- Have students create a comic strip that is of them doing a favorite hobby. It can be horseback riding, playing hockey, reading a book and so much more!
- Once students have finished drawing their comics, have them read page 26 of *Food and Farm Facts*.
- Ask students which products they were surprised about coming from agriculture.
- Have students look at their comic strips and write down five things that come from agriculture. Use page 26 of *Food and Farm Facts* as a guide.
- Have each student share which five by-products they discovered on their comic strip with the rest of the class.

### DISCUSSION:

- What role does agriculture play in your everyday life?

## Learn More!

Flip your way through My American Farm's exciting comics that connect kids to food, fiber, energy and agricultural careers, found at [myamericanfarm.org/classroom/ecomics/books](http://myamericanfarm.org/classroom/ecomics/books)



# English Language Arts

FOOD AND FARM FACTS • PRODUCTION

## PRECISION AGRICULTURE FILL-IN

Inspired by popular Mad Libs™, students practice vocabulary knowledge as they discover how farmers use precision agriculture to not only take care of the environment but become more efficient at producing commodities.

*Standards: Text Types and Purposes, Craft and Structure*

- (CCSS.ELA-LITERACY.W.4.3.C)
- (CCSS.ELA-LITERACY.RI.6.5)



### MATERIALS:

- *Food and Farm Facts* (page 28)
- "Story Sheet," see below (printed, one per pair of students)
- Writing paper (one per student)
- Writing utensil

### ACTIVITY SEQUENCE:

1. Print the "Story Sheet" on the page below prior to class.
2. Have students read through *Food and Farm Facts* on page 28.
3. Have students number a sheet of writing paper 1–5.
4. For each number, give students the word clue above and ask students to write one word by that number that follows the clue (e.g., clue: verb, word: jump).

5. After all students have written their word lists, have students pair up.
6. Give each pair a copy of the story and have students read their story to their partner by inserting their word list at each appropriate number location.

### DISCUSSION:

- Why do farmers use these different types of technology on their farms?
- What kinds of technologies in agriculture are like technologies that you might use in your house or at school?

## Learn More!

Read more about agriculture in one of our recommended publications on [agfoundation.org/recommended-pubs](http://agfoundation.org/recommended-pubs)



**20**

MINUTES

# English Language Arts

FOOD AND FARM FACTS • PRODUCTION

## PRECISION AGRICULTURE FILL-IN STORY SHEET

If I owned a farm, I would use \_\_\_\_\_ (1. GPS-based mapping, auto-steer tractors) to make my farm more efficient at producing \_\_\_\_\_ (2. fruit, vegetable, or other plant). Not only will this technology make my farm more efficient, but it will also \_\_\_\_\_ (3. increase yields, lower costs, reduce chemical use), which benefits the environment. Since our population is estimated to \_\_\_\_\_ (4. verb) to 9.8 billion by the year 2050, precision agriculture will be even more \_\_\_\_\_ (5. adjective). But I am up for the challenge, since I know that with these newer technologies, I will be able to take care of my crops and the environment even more efficiently! I am proud to be a farmer!

