

Where Does it Come From?

Wyoming Social Studies, Language Arts, Mathematics

Objectives:

- Students will interpret U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) data to discover where the agricultural commodities used in some common snacks were grown.

Background:

Different parts of our country are better for raising different agricultural commodities. Many of the fresh fruits and vegetables we eat grow in temperate parts of the country, like California, Florida and parts of Texas. That's because the growing season is longer in those parts of the continent. Wheat, barley, corn and other grain crops grow well in our country's midsection, in what once was grassland. In some parts of the country the land is not suitable for growing crops but provides good grazing land for cattle and other livestock. Potatoes grow best in cooler climates, so they are a good crop for mountainous regions where it stays cool longer in the spring. Some crops require a great deal of rain, and some need plenty of sunshine. We are able to produce many different kinds of products in our country because we have so many different climates.

Because of modern technology for storing, moving, and processing agricultural crops, we are able to have just about any kind of food we want to eat at any time of year.

The census of agriculture gathers numbers to help us know what grows best in which part of the country.

Activity Procedure:

1. Share background material, and explore the meanings of the words "commodity," "product," "end product," and "byproduct." To illustrate, bring to class some examples of end products and the agricultural commodities from which they were made, e.g., cotton ball (or raw cotton ball, if available) and cotton shirt, dry beans and bean dip, tomato and tomato sauce, apple and apple cider. Ask students to differentiate between the commodity and the end product.
2. Ask students to name their favorite foods. Write the foods on the chalkboard. Now ask students if they know what agricultural commodity these foods are made from and where the commodities grow. Write the guesses on the chalkboard.



Standards

Social Studies

Production, Consumption & Distribution: 3.1, 3.2
People, Places & Environments: 5.1, 5.2

Language Arts

5th Grade:

Reading: 1.F, 3.A, 3.B,
Writing: 2.C, 2.D

6th Grade:

Reading: 3.A, 3.B, 3.C, 3.D

Mathematics

Data Analysis & Probability:
5.1, 5.2

Materials

- Corn chips (corn)
- Potato chips (potatoes)
- Apple chips or applesauce (apples)
- Beef jerky (beef)
- Pretzels (wheat)
- String cheese (milk)
- Large paper bag
- Classroom map of the United States
- Colored map pins, one color per group

Estimated Time

60 Minutes

Grades 5-6

notes:

3. Place all the snacks in a large paper bag, and have students draw from the bag to determine which group they will work with. Explain that each snack represents a major agricultural commodity grown in the U.S. Write the words “corn,” “potatoes,” “apples,” “beef,” “wheat,” and “milk” on the chalkboard. Lead a class discussion to help students determine what product each snack represents.
4. For each group, make copies of the information about the specific agricultural commodity the group will be studying, the survey form, the data about their product and the map of the U.S. Have students read the information on the survey form, using the questionnaire provided. Then have students locate the top five states where their snacks grow on the maps of the U.S. and color those states. Have the students identify the state’s capitol.
5. Provide each group with a different color of map pins. Have each group report on its findings and mark on a classroom map the states where the designated food grows. Students should also report on growing conditions necessary for each product.
6. Lead a discussion in which you ask students what factors determine what is grown (climate, availability of land, transportation, storage capacities) in which states and how much is produced (climate, size of state, soil type).

Additional Activities:

1. If you have internet access for your students, have the groups compare their results with the “Inventory by County” maps on the NASS web site. Go to the NASS web site. Click on “Census of Agriculture.” Click on “Agricultural Atlas.” Click on “Go to Maps Index page.” Scroll down to find the appropriate commodity, e.g., Map #180 for beef, Map # 186 for dairy cattle, etc.
2. Have students keep records for a week of what foods are served in the cafeteria. Have them research to find out what raw materials are used in the foods. Use the data to find out where the food is grown.
3. Have students interview those responsible for buying the food used in the cafeteria and determine how much, if any, local food is used in preparing meals.
4. Have each student choose a favorite food and research the three main ingredients in the food and where the ingredients are produced.
5. Data on NASS tables is presented in thousands. Have students multiply numbers or add zeroes to find the actual numbers of selected data.

6. Have students stay in their groups and research the states in which their ingredients were grown to find size, climate, population, other crops grown, etc. Then have each group choose a presentation method to report their findings to the class—skits, posters, etc.
7. Have students write as many statements as they can about the data and information provided.

Additional Reading:

Bartoletti, Susan Campbell, *Black Potatoes: The Story of the Great Irish Famine, 1845-1850*. Houghton-Mifflin, 2001.
ISBN: 0618002715

Bial, Raymond, *Corn Belt Harvest*, Houghton-Mifflin, 1991.
ISBN: 0395562341

Corcoran, Barbara, *Potato Kid*, Macmillan, 1989.
ISBN: 038071213X

Johnson, Sylvia, *Wheat*, Lerner, 1990.
ISBN: 0822514907

Lauber, Patricia, *Cowboys and Cattle Ranching Yesterday and Today*, Thomas Y. Crowell, 1973.
ISBN: 0690219512

Sabin, Louis, *Agriculture*, Troll, 1985.
ISBN: 0816702055

Slawson, Michele Benoit, *Apple Picking Time*, Crown, 1994.
ISBN: 0517589710

Watts, Barrie, *Potato*, Silver Burdett, 1988.
ISBN: 0382095278

vocabulary:

- *commodity*
- *product*
- *by-product*
- *raw materials*
- *ingredients*

Materials Adapted from usda.gov/nass/

Name _____

Where Does It Come From?

1. My snack is _____
2. The main agricultural commodity used to make this snack is _____
3. Name some states where you think this commodity might be grown.



4. Make a check mark next to the growing condition that comes closest to describing what your agricultural commodity needs.

- a. Cool conditions.
- b. Not too wet.
- c. Sunny mild days when in bloom; plenty of rain mid summer.
- d. Sometimes raised on land that cannot be used for other purposes.
- e. Plenty of pasture and plenty of water.
- f. Plenty of water.



5. Look at the chart. Find the top five states where the main ingredient in your snack is produced.

1. _____
2. _____
3. _____
4. _____
5. _____



6. Count the states listed. _____ Are all 50 states represented? yes no

7. Is the state where you live on the list? yes no



If so, write the number showing how much of this agricultural product was produced in 2001 in your state. _____

8. List some products this agricultural commodity is used to make.



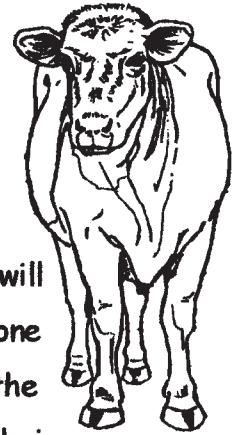
- _____
- _____

Name _____

Where Does It Come From?

Beef

We get meat from beef cattle and milk from dairy cattle. Although females from all cattle breeds produce milk and meat, some cattle are better at giving milk and some are better at providing meat.



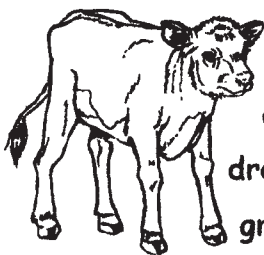
In a cow/calf operation, the farmer keeps cows for the calves they will produce. The mother cow carries the baby calf for a little longer than one school year. At birth the average calf will weigh 75-100 pounds, about the size of you and one of your friends. Calves grow by drinking milk from their mothers and by eating green grass from pastures. During the winter, calves stay in feed lots and eat grain. Sometimes they graze on wheat fields before it is time to let the wheat grow tall.

When the calves are big enough, about 800 pounds, they are sold to feed lots, where they are kept and fed.

From beef animals we get steaks and roasts and hamburgers. We also get leather for shoes, belts, baseball gloves and footballs. Gelatin in products such as ice cream and yogurt are made from the bones of the cow. Even chewing gum has an ingredient that comes from a cow. Here are some other products we get just from the fats and proteins produced by cattle.

- | | | | |
|-----------|----------------------|----------------------|-----------|
| makeup | fertilizers | machine lubricants | crayons |
| crayons | printing ink | automotive fluids | floor wax |
| detergent | high gloss for paper | industrial cleansers | perfume |

Cattle and calves for beef are produced in every state in the nation. They can be raised in many different climates and on many different kinds of land. In the West, cattle are often grazed on land that cannot be used for other purposes. This is land that erodes easily or is too rocky or dry. As long as the beef producer doesn't keep the animals for too long on one section of land, grazing animals help keep this land healthy. They fertilize the land with their droppings while their hooves break up the surface of the soil so tender grass can poke through.





CATTLE AND CALVES

Inventory, January 1, 2007
Thousand Head



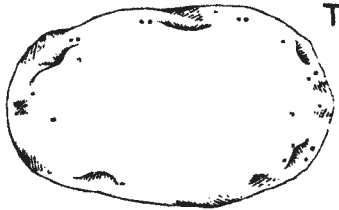
Alabama.....	1,320
Alaska.....	16
Arizona.....	940
California.....	1,750
Colorado.....	5,500
Connecticut.....	2,700
Delaware.....	53
Florida.....	23
Georgia.....	1,730
Hawaii.....	1,170
Idaho.....	158
Illinois.....	2,180
Indiana.....	1,340
Iowa.....	900
Kansas.....	3,950
Kentucky.....	6,400
Louisiana.....	2,460
Maine.....	860
Maryland.....	86
Massachusetts.....	220
Michigan.....	44
Minnesota.....	1,060
Mississippi.....	2,420
Missouri.....	980
Montana.....	4,450
Nebraska.....	2,400
Nevada.....	6,650
New Hampshire.....	500
New Jersey.....	35
New Mexico.....	38
New York.....	1,580
North Carolina.....	1,420
North Dakota.....	850
Ohio.....	1,850
Oklahoma.....	1,260
Oregon.....	5,250
Pennsylvania.....	1,340
Rhode Island.....	1,600
South Carolina.....	4.9
South Dakota.....	400
Tennessee.....	3,700
Texas.....	2,310
Utah.....	14,000
Vermont.....	830
Virginia.....	265
Washington.....	1,620
West Virginia.....	1,140
Wisconsin.....	420
Wyoming.....	3,400
U.S. (Total).....	1,430
U.S. (Total).....	97,002.9

Source: NASS, USDA

Where Does It Come From?

Potatoes

The potato is not a root but a storage area, which is part of the plant's underground stem. The roots collect more water and food than the growing plant can use at one time.



The plant stores the excess food in oval packages, called tubers (the potato). When the greenery starts to wither and turn brown, the potatoes are ready to harvest.

Potatoes produce more pounds of protein per acre than corn, rice, wheat or oats. The average American eats about 125 pounds of potatoes and potato products each year.

Potatoes were first grown by ancient tribes living in the Andes Mountains of Bolivia and Peru as early as 200 AD. Archaeologists have found pictures of potato plants in designs on ancient pottery. The tribespeople preserved the potatoes by trampling them and then drying them.

Even though potatoes were first grown in South America, people in North America did not start eating them until after they became a popular food in Europe. European explorers carried potatoes from South America to Europe in 1570. About 150 years later the rulers of several European countries ordered their people to start growing potatoes. In Ireland, potatoes became the main food for the people. In the 1840s disease wiped out the potato crop in Ireland for two years in a row. Many Irish people moved to America then, because they had no food to eat.

Most of the world's potatoes today are grown in Europe. Potatoes are a truck crop grown in all 50 of the United States. A truck crop is a crop that is grown on a farm and taken to the market by truck.

Before they go to market, potatoes are graded according to size and quality. The price of the potato depends on how it looks and how much it weighs.

Potatoes grow best in cool weather and are an important crop in mountainous parts of the country, where the growing season is short.

From potatoes we get some of our favorite foods—French fries, mashed potatoes, potato chips and more.

POTATOES

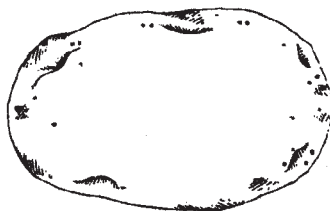
Production, 2002-2007
Thousand Cwt*

Alabama.....	182
Arizona.....	1120
California.....	15,339
Colorado.....	21,989
Delaware.....	520
Florida.....	7,807
Idaho.....	131,650
Illinois.....	2,440
Indiana.....	1,789
Kansas.....	NR
Maine.....	16,530
Michigan.....	14,700
Minnesota.....	20,680
Missouri.....	1,980
Montana.....	3,696
Nebraska.....	8,051
Nevada.....	2,847
New Jersey.....	636
New Mexico.....	1,998
New York.....	5,216
North Carolina.....	2,700
North Dakota.....	23,660
Ohio.....	975
Oregon.....	20,238
Pennsylvania.....	2,200
Rhode Island.....	180
South Dakota.....	NR
Texas.....	6,682
Utah.....	NR
Virginia.....	1,134
Washington.....	102,300
Wisconsin.....	28,160
Wyoming.....	NR
U.S. (Total).....	449,156

*A unit of weight in the U.S. Customary System equal to 100 pounds.

NR =No Reports

Source: NASS, USDA



Where Does It Come From?



Apples

Scientists say apples have been around for 750,000 years. In North America, the first apple orchard was planted in Boston, Massachusetts, in 1625.

As our country was settled, nearly every farm grew some apples. Most of the early varieties would be considered poor today. Of nearly 8,000 varieties known around the world, about 100 are grown in commercial quantity in the U.S.

Apples come in lots of colors and shapes. Each apple is loaded with minerals, vitamins and fiber. Apples are in the Pome family—a fruit whose seeds are embedded in

the core of the fruit. The rose is also in this family. The average apple tree will bear fruit in three years, with full production coming in 8-10 years. A standard apple tree lives an average of 100 years.

Growing an apple takes all year. In the winter, while the trees are dormant, apple growers begin pruning—sawing off limbs and clipping branches to let the sunshine in. Pruning helps the tree produce better fruit.

About the time when frost ends in spring, the buds begin to swell. With the opening of the "King" blossom (the largest and centermost of the five blossom clusters), it is time for pollination to begin. Bee colonies rented from bee keepers must be moved in quickly. Sunny mild days are needed during bloom to encourage strong bee activity. Apples need more than one variety of pollen for the cross-pollination that ensures good fruit set.

Fruit size and firmness are affected by the moisture the apple trees receive in mid summer. If the weather is too dry, producers must irrigate.

August is the last growing month before the apples begin to ripen. Red apples need cool nights during harvest to trigger an enzyme which increases the amount of color or "blush." Apples bruise easily and must be hand picked. Picking begins around the end of August and ends in October.

Besides fresh apples for eating, apples give us applesauce, apple cider, apple juice, apple pie and other delicious baked treats.

APPLES

Total Production, 2004
Million Pounds

Arizona.....	22.2
Arkansas.....	NR
California.....	370.0
Colorado.....	31
Connecticut.....	15
Georgia.....	14
Idaho.....	80
Illinois.....	49
Indiana.....	50
Iowa.....	2.1
Kansas.....	NR
Kentucky.....	5.5
Maine.....	31.5
Maryland.....	41
Massachusetts.....	28
Michigan.....	790
Minnesota.....	22
Missouri.....	49
New Hampshire.....	18
New Jersey.....	45
New Mexico.....	NR
New York.....	1,040
North Carolina.....	145
Ohio.....	102
Oregon.....	140
Pennsylvania.....	455
Rhode Island.....	1.8
South Carolina.....	4
Tennessee.....	8.5
Utah.....	38
Vermont.....	32
Virginia.....	300
Washington.....	5,800
West Virginia.....	87
Wisconsin.....	52
U.S. (Total).....	9,869.6

Source: NASS, USDA

NR =No Reports



Where Does It Come From?

Wheat

Wheat is one of the oldest foods known to man. There are six classes and more than 30,000 varieties of wheat. The six classes are hard red winter, hard red spring, soft red winter, durum, hard white and soft white. They all have origins in seeds that were carried to the U.S. by European farm immigrants.



Since there are so many varieties of wheat, it can be grown in many different climates. Somewhere in the world wheat is being harvested every month of the year.



Planting of winter wheat begins before September in the northern U.S. and continues through October in the southern regions. The wheat will sprout and grow in the fall until a winter freeze occurs. It will then become dormant until spring, when it will mature until harvest. Winter wheat is harvested in May in the southern regions. Harvest continues through July in the north.

Too much rain creates problems at all stages of growth. Spring wheat may rot before sprouting. If planting is delayed because the ground is too wet, it may not mature.

If the plant does not have enough moisture, it will grow weak, and the wheat head won't produce plump kernels.

Hard wheat flours provide a variety of bread products. Durum semolina and flour are used to make pasta. Soft wheat is used to make crackers, cookies, cereals, cakes and pancakes. Wheat is also used to make wallpaper glue and other building products.



WHEAT

Production, 2007
Thousand Bushels

Alabama	3,440
Arizona	8,260
Arkansas	28,700
California	26,235
Colorado	95,520
Delaware	3,740
Florida	513
Georgia	9,200
Idaho	83,675
Illinois	50,730
Indiana	21,090
Iowa	1,400
Kansas	283,800
Kentucky	12,250
Louisiana	11,880
Maryland	11,560
Michigan	35,100
Minnesota	80,430
Mississippi	18,480
Missouri	37,840
Montana	149,820
Nebraska	84,280
Nevada	1,300
New Jersey	1,428
New Mexico	7,800
New York	4,420
North Carolina	20,000
North Dakota	300,00
Ohio	45,990
Oklahoma	98,000
Oregon	46,785
Pennsylvania	8,990
South Carolina	4,185
South Dakota	147,516
Tennessee	10,660
Texas	140,600
Utah	6,420
Virginia	13,120
Washington	128,722
West Virginia	348
Wisconsin	18,910
Wyoming	3,445
U.S. (Total)	2,066,722

Source: NASS, USDA



Where Does It Come From?

Corn



The corn plant is an American native. It was first grown by farmers in Mexico around 7,000 years ago.

Corn is an annual plant that grows seven to 10 feet tall. It is actually a type of grass. Strong roots called prop roots help support the cornstalk.

A tassel grows at the top and contains hundreds of small flowers that produce pollen.

Producers in the U.S. feed the largest part of the corn crop to cattle, hogs, sheep and poultry. The number of bushels of corn produced in the U.S. measures more than double that of any grain crop.

The different types of corn include dent corn, sweet corn, flint corn, popcorn and flour corn. Dent corn and flint corn are commonly called "field corn" because they are fed to animals. Sweet corn, popcorn and flour corn are used for human food.

Corn is planted in the early spring using a corn planter. The machine drops the kernels into rows and then presses the soil around each kernel. Before planting, the planter places fertilizer in the soil. The rest is up to the weather. Rain is extremely important because the corn plant needs a lot of water to grow.

Sometime between late September and November the corn will be dry enough to be harvested. Corn is harvested by a large combine. The machine cuts off the corn plant, removes the ear of corn and separates the kernels from the corn cob. Parts of the corn plant are left in the field to protect the soil for the next year.

There are more than 3,500 different uses for corn products, and more uses are being found each day. Corn makes oil, syrup, cereal, starch and more than 1,000 other products you can buy in the grocery store.

Corn kernels are used to make fructose, a liquid sugar used to sweeten soda pop and bakery goods. Cornstarch is also made from corn. It can be used to produce packaging materials which help protect the environment. Ethanol is made from corn and is used as fuel for cars, trucks and buses.

FIELD CORN

Production, 2007
Thousand Bushels

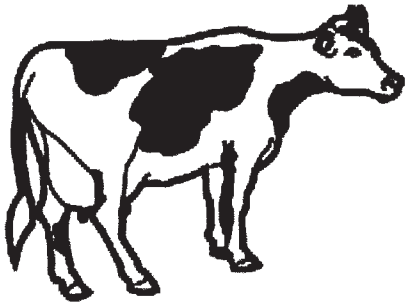
Alabama	22,120
Arizona	4,255
Arkansas	99,120
California	36,000
Colorado	150,520
Delaware	17,945
Florida	3,325
Georgia	58,500
Idaho	17,325
Illinois	2,283,750
Indiana	987,350
Iowa	2,368,350
Kansas	518,000
Kentucky	175,440
Louisiana	120,450
Maryland	46,865
Michigan	291,400
Minnesota	1,138,800
Mississippi	141,000
Missouri	461,500
Montana	5,510
Nebraska	1,472,000
New Jersey	10,250
New Mexico	9,625
New York	69,850
North Carolina	102,000
North Dakota	272,600
Ohio	541,500
Oklahoma	39,150
Oregon	6,825
Pennsylvania	125,440
South Carolina	37,000
South Dakota	544,500
Tennessee	83,210
Texas	296,000
Utah	3,256
Virginia	34,425
Washington	25,200
West Virginia	2,997
Wisconsin	442,800
Wyoming	7,740
U.S. (Total)	13,073,893

Source: NASS, USDA

Name _____

Where Does It Come From?

Milk

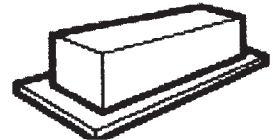


Just as beef cattle are raised mostly for their meat, dairy cattle are raised for their milk. The main breeds of dairy cows in the U.S. are Holstein, Guernsey, Jersey, Brown Swiss and Ayrshire. Some breeds produce more milk than others, and some produce richer milk than others.

A dairy cow weighs about 1,500 pounds. The average cow spends 6-10 hours a day eating. That's about 90 pounds of food. She eats hay (dried grass), grains (feed), and silage (chopped green grasses and green corn or beans). She drinks 25-50 gallons of water each day. That's nearly a bathtub full.

Cows that eat only grass produce about 48 glasses of milk a day.

Cows that eat grass and feed or silage produce 100 glasses a day.

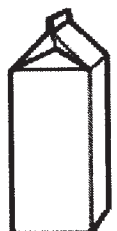


Cows make milk to feed their calves, but they are such big animals that they make much more milk than a calf needs. A dairy cow must have one calf a year, or she will stop producing milk. The cows must be milked twice a day and sometimes three times a day.

Dairy farmers are careful to keep the milk clean and avoid exposing it to the open air, which would contaminate it. The cow's udder is washed before she is milked to keep the milk clean.

Before modern milk delivery, when people traveled and wanted milk, they had to take their cows with them. Today a tanker truck picks up milk from the dairy each day and delivers it to the milk processing plant. At the dairy plant, the milk is pasteurized to kill any disease-causing bacteria.

The milk is processed into many different foods and dairy products, including butter, chocolate milk, ice cream, yogurt, cheese and more.



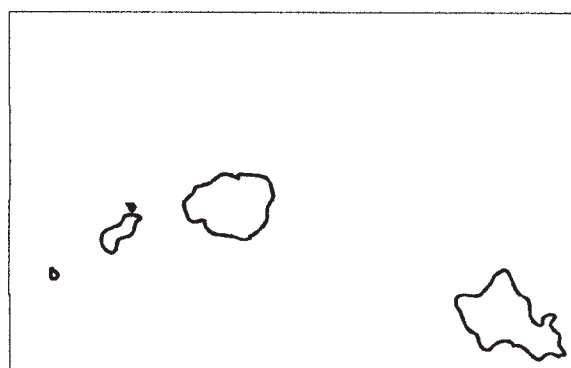
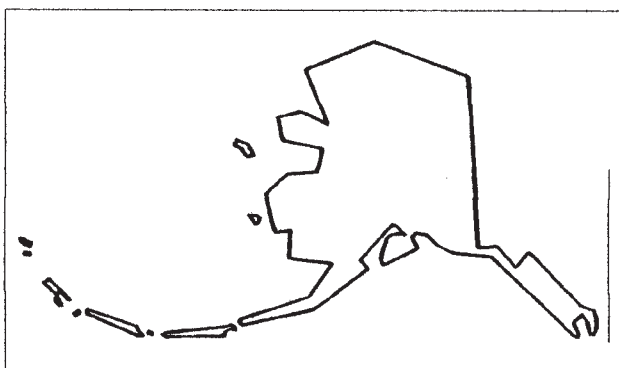
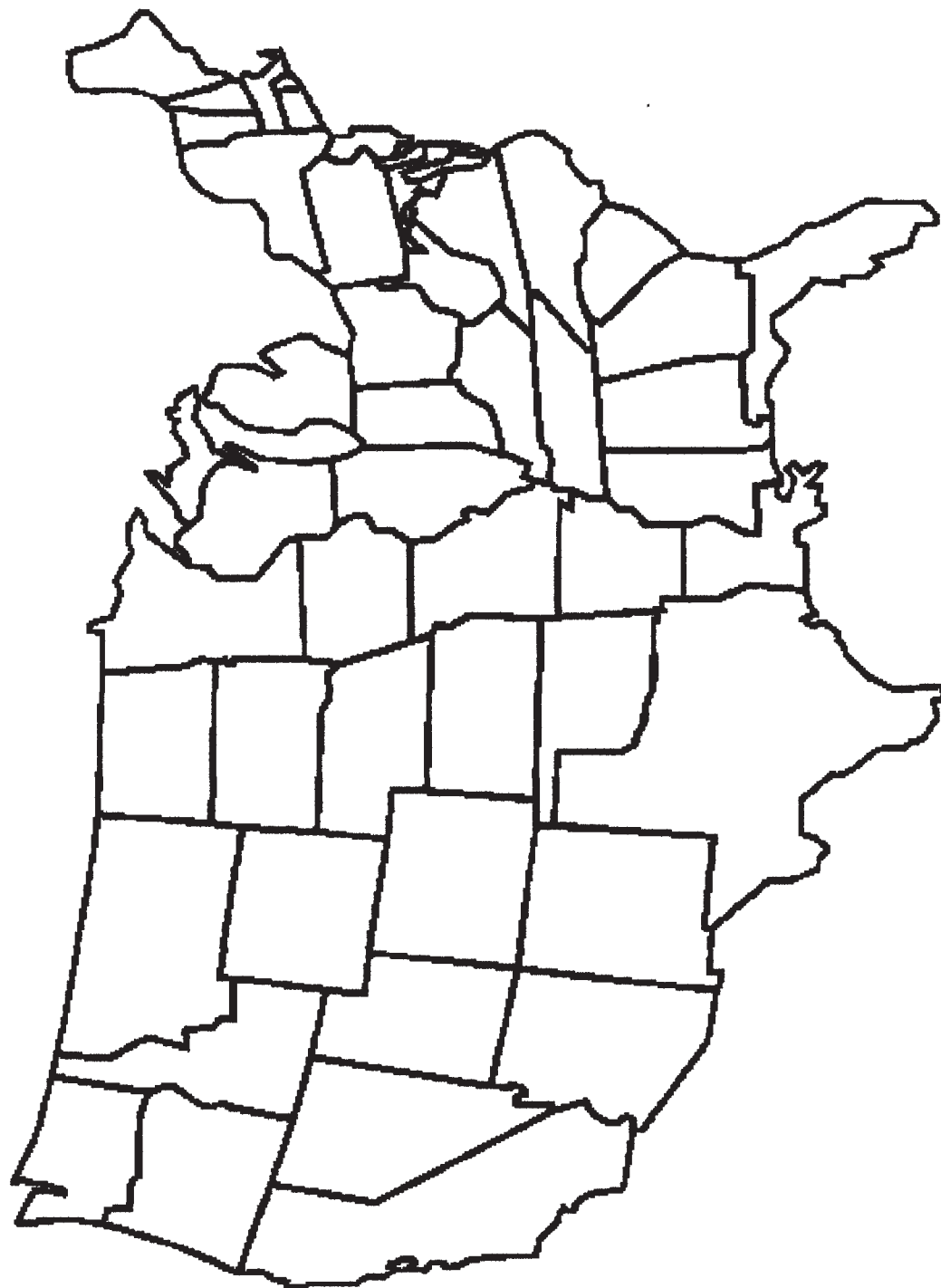


MILK

Production 2006
Million Pounds

Alabama	203
Alaska	9.8
Arizona	394
Arkansas	265
California	38,830
Colorado	2,547
Connecticut	367
Delaware	122
Florida	2,167
Georgia	1,404
Hawaii	57
Idaho	10,895
Illinois	1,978
Indiana	3,299
Iowa	4,130
Kansas	2,343
Kentucky	1,301
Louisiana	396
Maine	574
Maryland	1,093
Massachusetts	278
Michigan	7,100
Minnesota	8,364
Mississippi	341
Missouri	1,840
Montana	354
Nebraska	1,118
Nevada	558
New Hampshire	293
New Jersey	178
New Mexico	7,638
New York	12,045
North Carolina	944
North Dakota	470
Ohio	4,860
Oklahoma	1,214
Oregon	2,242
Pennsylvania	10,742
Rhode Island	19
South Carolina	278
South Dakota	1,505
Tennessee	1,049
Texas	7,145
Utah	1,745
Vermont	2,592
Virginia	1,771
Washington	5,464
West Virginia	200
Wisconsin	23,398
Wyoming	118
U.S. (Total)	181,798

Source: NASS, USDA



Where Does It Come From? (answers)

1. Beef jerky: 2. beef; 3. student determined; 4. d; 5. Texas, Kansas, Nebraska, California, Oklahoma; 6. 49 states; 7. specific to your state; 8. makeup, crayons, steaks, roasts, hamburgers, ball gloves, footballs, shoes, belts, ice cream, yogurt, chewing gum, detergent, toothpaste, floor wax, medicine.

1. Potato chips: 2. potatoes; 3. student determined; 4. a; 5. Idaho, Washington, Wisconsin, Wyoming, North Dakota; 6. 33 states; 7. specific to your state; 8. French fries, mashed potatoes, potato chips.

1. Apple chips or applesauce: 2. apples; 3. student determined; 4. c; 5. Washington, New York, Michigan, California, Pennsylvania; 6. 35 states; 7. specific to your state; 8. applesauce, apple pie and other desserts, fresh apples for eating, apple cider, apple juice.

1. Pretzels: 2. wheat; 3. student determined; 4. b; 5. Kansas, North Dakota, Washington, Oklahoma, Texas; 6. 42 states; 7. specific to your state; 8. pasta, crackers, cookies, cereals, cakes, pancakes, wallpaper glue and other building products.

1. Corn chips: 2. corn; 3. student determined; 4. f; 5. Iowa, Illinois, Nebraska, Indiana, Minnesota; 6. 41 states; 7. specific to your state; 8. oil, syrup, cereal, starch, soda pop, bakery goods, cornstarch, fructose, ethanol, packaging materials.

1. String cheese: 2. milk; 3. student determined; 4. e; 5. California, Wisconsin, New York, Pennsylvania, Minnesota; 6. 50 states; 7. specific to your state; 8. butter, chocolate milk, ice cream, yogurt, cheese and more.



Agriculture Counts—www.usda.gov/nass/