Iowa's Corn and Agriculture Industry

How does Iowa corn impact Iowans and the world?

Iowa leads the United States in corn production. The state set a record in 2016 with 2.7 billion bushels, slightly ahead of 2017 and 2018 levels. In 2018, however, the estimated yield set an all-time high at 204 bushels. Iowa's incredibly fertile fields of north central Iowa stretch for miles of corn and soybeans, providing the United States with two of their most valuable exports.

History of Corn and Iowa

Corn has been at the center of Iowa life for almost a thousand years. The ancestors of our modern corn plants first appeared in Central Mexico as a tiny ear wrapped in a tight husk. Through careful cultivation, mostly by American Indian women, the plant eventually evolved into size and shape we know it today. It spread into what is today the American Southwest, along the Gulf Coast and up the Mississippi River and its tributaries until it was a staple of the Upper Midwest and most tribes east of the Mississippi. English colonists first encountered it with the tribes they met on the Atlantic Coast from New England south to Georgia. Corn cultivation had a major impact on the seasonal activities of those who planted it. The year revolved around spring planting and fall harvest, often with the celebration of a successful crop marked with annual festivals. In Iowa pioneer times, farm boys could often attend school only in the winter because their labor was needed at home for planting, cultivation and the fall harvest.

Corn is a giant grass plant and, therefore, easily adapted to the fertile plains of the Iowa prairies. It is incredibly productive as one kernel planted will produce one or two ears with 700+ kernels each. Hybrid varieties developed and spread in the 1920s and 1930s proved so successful that most Iowa farms had adopted them for the end of World War II. Plants grown from hybrids, however, lack the vigor of the parents, creating an annual market and a very profitable hybrid seed industry for the state.

Because corn is bulky, farmers learned early that it is more profitable to feed their corn to livestock, primarily hogs, and then market "the corn" as pork. The Corn Belt corn/hogs economy developed in the late 19th century when the railroad lines connected midwestern farmers with eastern markets. Most of the corn grown in Iowa is what called "field corn." Only one percent of corn planted in the United States is sweet corn. Almost all field corn is used for animal feeds, the production of ethanol as a fuel for automobiles and for manufacturing in products like plastics.

Corn's Effect on Farming Practices

Farm practices have evolved radically since early American Indians and pioneer times. An early technique was to dig a small hole with a hoe and to drop in three to five kernels. Indians often planted beans and squash around the corn to allow the vines to grow up the corn stalks. Weeds were chopped out during the growing season. The labor required kept fields small. The introduction of horse-drawn plows and planters in the mid-19th century allowed one farmer to cultivate much larger fields. The mud and clay scoured ("slid off") John Deere's steel plowshare, saving the time the farmer had to stop and remove the sticky soil. With the tractor in the early 20th century and the mechanical corn picker, field sizes again took a major leap.

Agriculture has been a major occupation of Iowans and corn has been the most significant product. Iowa is truly a product of this incredible grain.

Supporting Questions

How has farming in Iowa seen continuity and change?

- Average Farm Size in Iowa Map, 1933 (Map)
- Corn Yield Map of Iowa, 1933 (Map)
- Farmer Working a Corn Field with a John Deere Tractor, ca. 1945 (Image)
- Field Workers Harvesting Sweet Corn in Grimes, Iowa, August 1946 (Image)
- Number of Farms and Average Farm Size in Iowa from 1950 to 2014, 2015 (Document)
- Corn for Grain Yield Map of Iowa, 2018 (Map)
- Gulls Following a Farmer on his Tractor, Date Unknown (Image)

What impact did John Deere have on farming in Iowa?

- "The Hawkeye Cultivator," 1863 (Document)
- Gilpin Sulky Plow Patent, 1875 (Document)
- "The Original Steel Plow" and John Deere, 1882 (Document, Image)
- "A Short Interview" with John Deere, ca. 1886 (Document)
- New Deal Gang Plow with Traction Engine Advertisement from John Deere, 1889 (Document)
- Brochure about John Deere's Gilpin Sulky Plow, 1895 (Document)
- Aerial View of the John Deere Tractor Company in Waterloo, Iowa, 1944 (Image)
- Farmer Operating Corn Picker with John Deere Tractor, ca. 1945 (Image)

Where does Iowa corn go and how is it used?

- Flowchart of U.S. Agricultural Supply Chain for Raw and Processed Products, 2009 (Document)
- Flowchart Showing the Uses of Corn, 2009 (Document)
- "Percent of Total U.S. Corn Exports by Country" Graph, 2017 (Document)
- "Compare... Cargo Capacity" Infographic, February 25, 2019 (Document)

What is Iowa Sister States' role in global agricultural opportunities?

- Iowa Hog Lift to Japan, 1960 (Image)
- Lee Norris' Truck Loaded with Hogs, 1960 (Image)
- Letter from Governor Herschel Loveless to Lee Norris about the Hog Lift, January 18, 1960 (Document)
- Speech by Governor Norman Erbe on the Dedication of the Japanese Friendship Bell, October 17, 1962 (Document)
- Governor of Yamanashi, Japan, Asking Citizens to Help Iowans Suffering from Flood Damage, 1993 (Document)
- "The 1960 Hog Lift," 2001 (Document)
- "Iowa Sister States Agriculture Impact," 2019 (Document)

*Printable Image and Document Guide

Additional Resources

A Tale of Two Corns
This two-page handout is from the National Corn Growers Association and it shows how corn from used in 2017.

Iowa Corn: Exports
This video focuses on the supply and demand of Iowa corn.

Iowa Nice Guy: Get Educated on Ethanol
This video looks at the uses and production of ethanol in Iowa.

"Norman Borlaug" on Iowa Public Television's Iowa Pathways
The webpage from Iowa Public Television includes text and images of the famous Iowan, Norman Borlaug, who impacted global agriculture, fed billions of people, won a Nobel Peace Prize and established the World Food Prize.

"My Family's Corn Farm"
This online book shows text and photos of an Iowa girl whose family grows corn. The story is told from girl's perspective with additional information about farming for adults.

John Deere 1927 Corn Picker
This one-minute video shows a 1927 John Deere corn picker in action.

Picking Corn with Horses
This one-minute video shows a farmer picking corn with the use of horses.

Harvesting Corn with Belgian Horses Pulling a Corn Binder
This three-minute video shows a farmer harvesting corn with the use of Belgian horses pulling a corn binder.

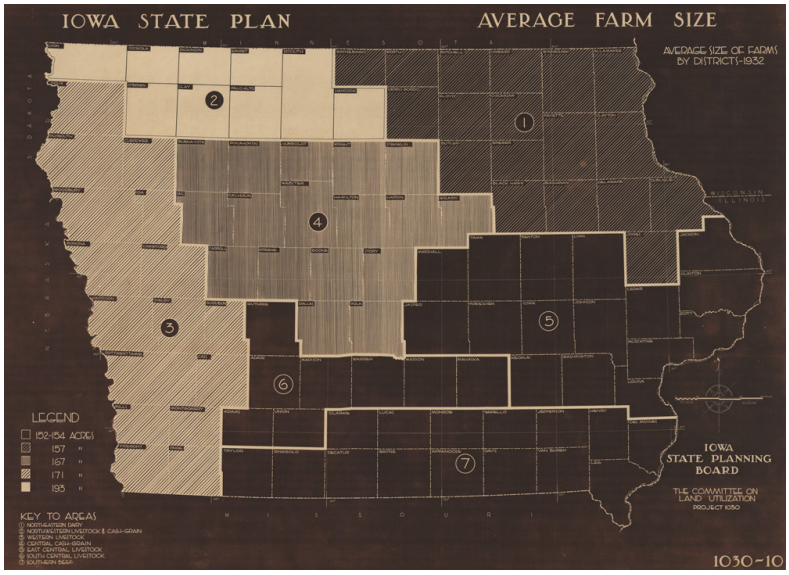
***The Boy Who Changed the World* by Andy Andrews**
This book tells the story of how Norman Borlaug saved the lives of two billion people but would not have gotten to that point without the very important actions of other people.

***Sweet Corn and Sushi* by Lori Erickson**
This book tells the story of how Iowa and Yamanashi became sister states.

The Commodity Chain of Corn
This interactive webpage is a visual representation of information on global corn production, sweet corn production, subsidies, ethanol, livestock feed, corn in food and U.S. corn exports.

"Branstad Asks for Support for Snow-Ravaged Japan Sister State" Article from *The Des Moines Register*
This article focuses on how Governor Terry Branstad asked Iowans to send money to Yamanashi, Japan, after heavy snow damaged roads and infrastructure in the winter of 2014.

Average Farm Size in Iowa Map, 1933



Courtesy of University of Iowa Library and Archives, "Average farm size: average size of farms by district, 1932," Iowa State Planning Board, 1933

Description

In 1933, the State Planning Board of Iowa, a special committee that only existed from 1934 to 1939 to study long-term land use plans for the state, published this map showing the average farm size measured in number of acres. They also showed if the land was used for cash grain cops and/or livestock.

Transcript of Average Farm Size in Iowa Map

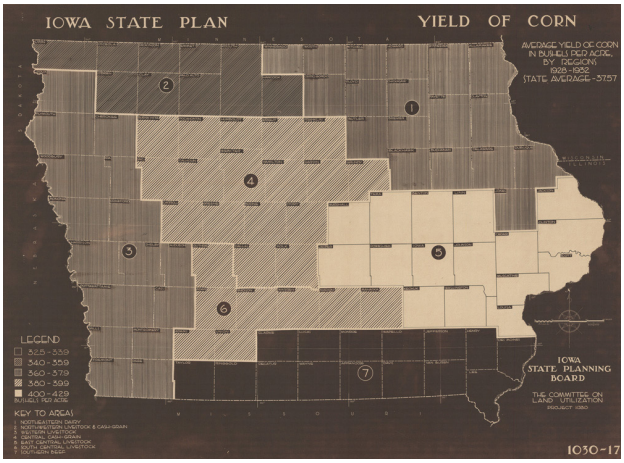
Source-Dependent Questions

- Which district has the largest average farm size In Iowa? Explain how you know which district that is.
- Look at the map, **"Number of Farms and Average Farm Size, Iowa: 1950-2014."** How did the size of Iowa farms change from 1932 to 1950?

Citation Information

"Average farm size: average size of farms by district, 1932," Iowa State Planning Board, 1933. Courtesy of University of Iowa Library and Archives

Corn Yield Map of Iowa, 1933



Courtesy of University of Iowa Library and Archives, "Yield of corn: average yield of corn in bushels per acre, by region 1928-1932: state average 37.57," Iowa State Planning Board, 1933

Description

Each year, the United States Department of Agriculture (USDA) publishes many statistics telling what happened in agriculture that year. One of those statistics is the average corn yield. They add together all of the bushels of corn harvested in that county and then divide by the number of acres of corn planted in the county to calculate an average for the county. The USDA publishes this information every year. For this publication, they show the average yield for a group of counties, called a region.

Transcript of the Corn Yield Map of Iowa

Source-Dependent Questions

- What was the statewide average corn yield from 1928 to 1932?
- What might be some of the reasons for the changes in yield between 1932 and **2018**?

Citation Information

"Yield of corn: average yield of corn in bushels per acre, by region 1928-1932: state average 37.57," Iowa State Planning Board, 1933. Courtesy of University of Iowa Library and Archives

Farmer Working a Corn Field with a John Deere Tractor, ca. 1945

Courtesy of the State Historical Society of Iowa, ca. 1945

Description

In the early summer, before corn plants are big enough to shade the ground around them and fill in the rows, the farmer has to get rid of the weeds so they do not choke out the corn plants. In the 1940s, farmers worked the fields with a cultivator attached to a tractor. Today, many farmers use a chemical to do that job.

Source-Dependent Questions

- Based on close observation, what season is shown in the photo? Why did you make that determination?
- Compare this photo to **this one**. What is different about the beginning of the farming season to the end of the season? What other similarities and differences do you notice between the photos?

Field Workers Harvesting Sweet Corn in Grimes, Iowa, August 1946

Courtesy of the State Historical Society of Iowa, Des Moines Register & Tribune, August 1946

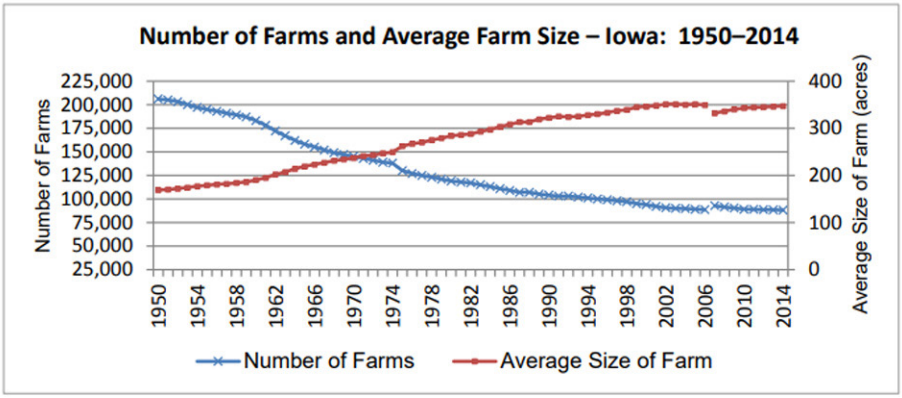
Description

For about five weeks in the summer, many people in Iowa enjoy fresh from the field sweet corn. In this photo, field workers are harvesting sweet corn for the Beaver Valley Canning Company (later called the Grimes Canning Company) on the farm of Jesse Taylor near Grimes, Iowa. Even though sweet corn is only a small percentage of the corn grown in Iowa, it is the corn that we buy canned or frozen from the grocery store. The kernels on field corn are removed from the cob in the field, but the ears of sweet corn must remain whole until they get to the canning factory.

Source-Dependent Questions

- What technology is helping these workers to do their job?
- How is this similar to and different from how corn is harvested today?

Number of Farms and Average Farm Size in Iowa from 1950 to 2014, 2015



Courtesy of USDA, "Number of Farms and Average Farm Size - Iowa: 1950-2014," pp. 10, Iowa Agricultural Statistics Bulletin, National Agricultural Statistics Service, United States Department of Agriculture (USDA), 2015

Description

This graph looks at the number of farms compared to the average farm size in Iowa from 1950 to 2014.

Transcript of "Number of Farms and Average Farm Size - Iowa: 1950-2014"

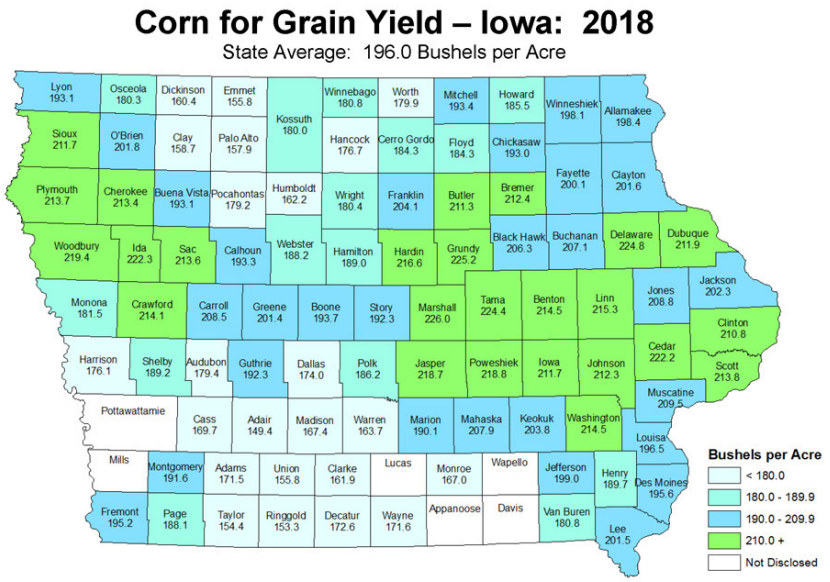
Source-Dependent Questions

- When the same measurement is taken over a period of time and put on a graph, a trend line forms. What is the trend for the number of farms in Iowa from 1950 to 2014? What is the trend for the average size of a farm in Iowa from 1950 to 2014?
- Connect to what you know about urban and rural areas as well as agriculture and manufacturing. Make a prediction about where people are living and what kinds of jobs they may have today versus long ago. Explain your prediction..

Citation Information

"Number of Farms and Average Farm Size - Iowa: 1950-2014," pp. 10, *Iowa Agricultural Statistics Bulletin*, National Agricultural Statistics Service, United States Department of Agriculture (USDA), 2015. Courtesy of USDA

Corn for Grain Yield Map of Iowa, 2018



Courtesy of USDA, "Corn for Grain Yield – Iowa: 2018," National Agricultural Statistics Service, United States Department of Agriculture (USDA), 2018

Description

Each year, the United States Department of Agriculture puts out statistics about what happened in agriculture that year. This map shows the average bushels of corn produced per acre for by county. Many variables impact the corn crop yield such as weather and soil conditions. The top of the map reads that the state average is 196.0 bushels per acre.

Transcript of "Corn for Grain Yield - Iowa: 2018" Map

Source-Dependent Questions

- What was the statewide average corn yield from 2018?
- How does this statewide average corn yield compare with the **statewide average yield in 1928 to 1932**? Make a graph to show the comparison.
- 2018 was a drought year for some parts of Iowa. Use evidence from the map to predict which parts of Iowa received less rain and hotter temperatures.

Citation Information

"Corn for Grain Yield – Iowa: 2018," National Agricultural Statistics Service, United States Department of Agriculture (USDA), 2018. Courtesy of USDA

Gulls Following a Farmer on his Tractor, Date Unknown

Courtesy of the State Historical Society of Iowa, Date Unknown

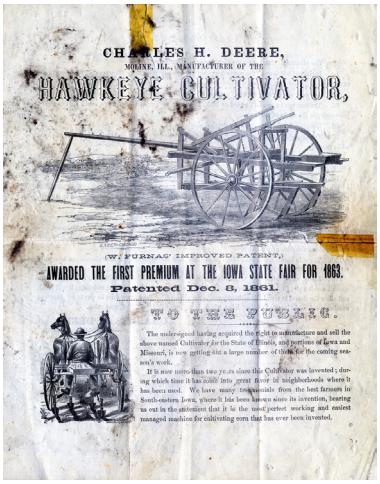
Description

One of the things that has not changed about growing corn is the kind of work that happens. In the spring, farmers prepare the soil and plant the corn seeds. At the time of this photograph, many farmers used a plow to turn the soil over before they planted the seeds. Turning over the soil with a plow blade broke up the grass roots and made it easier for the corn seeds to sprout. Today, many farmers no longer do this because it can cause the topsoil to wash away in the sun, wind and rain.

Source-Dependent Questions

- Compare the working conditions of this Iowa farmer from about 1940 with the working conditions of farmers today. What is the same, and what is different?
- Why would seagulls love farmers who are plowing their fields before they plant them? *(Hint: They are round, wiggle through the dirt and are mighty tasty to a seagull.)*

"The Hawkeye Cultivator," 1863


CHARLES H. DEERE,
MOLINE, ILL., MANUFACTURER OF THE
HAWKEYE CULTIVATOR,
(W. FURNAS' IMPROVED PATENT,)
AWARDED THE FIRST PREMIUM AT THE IOWA STATE FAIR FOR 1863.
Patented Dec. 8, 1861.
TO THE FARMERS.

Courtesy of John Deere, "The Hawkeye Cultivator," Deere & Company, 1863

Description

The Hawkeye Cultivator was John Deere's first riding implement. Just like his original steel plow, the invention came about to serve a need. Many men were returning from the Civil War wounded and unable to walk behind an implement. Deere's Hawkeye Cultivator allowed men with injured or missing limbs to still cultivate their fields.

Transcript of "The Hawkeye Cultivator"

Source-Dependent Questions

- What job is this machine intended to do?
- How does this machine help the user?

Citation Information

"The Hawkeye Cultivator," Deere & Company, 1863. Courtesy of John Deere

Gilpin Sulky Plow Patent, 1875

Courtesy of John Deere, "Gilpin Sulky Plow Patent," United States Commissioner of Patents, 1875

Description

When an inventor registers a patent for their invention, they have the right to produce and sell that invention for a certain number of years, and no one can copy their idea. Gilpin Moore received a patent for his invention in 1875, and then partnered with John Deere to manufacture it.

Transcript of the Gilpin Sulky Plow Patent

Source-Dependent Questions

- Why would an inventor want a patent?
- Was John Deere copying Moore's idea? Use evidence from the text to support your answer.

Citation Information

"Gilpin Sulky Plow Patent," United States Commissioner of Patents, 1875. Courtesy of John Deere

"The Original Steel Plow" and John Deere, 1882

The Original Steel Plow

In 1837 our founder, John Deere, was a typical blacksmith turning out hayforks, horseshoes, and other essentials for life on the prairie.

Then one day, a broken steel sawmill blade gave him an opportunity. He knew well the back-breaking difficulty of farmers near his home in Grand Detour, Illinois. While plowing, they often interrupted their work to scrape the sticky prairie soil from their cast-iron plows. He envisioned that soil sliding easily off of a highly polished steel moldboard. With steel scarce in the area, Deere acquired a broken steel saw blade, and from it crafted a new type of moldboard plow.

Now, nearly two centuries later, the company that grew out of the success of this innovative plow continues to manufacture advanced equipment for those whose commitment to the land runs deep.

While the original plow could only do a fraction of the work farmers can tackle with modern tillage equipment, it was high-tech at the time. Testing by curator Edward Kendall of the Smithsonian Institution of an 1838 John Deere plow revealed the innovative material, and design, of Deere's early plows. Historian

Courtesy of John Deere, "The Original Steele Plow," 1882

Description

In the mid-1800s, Iowans worked very hard to produce a corn crop in the thick prairie sod. In Illinois, our neighbor to the east, John Deere was working as a blacksmith when he had an amazing idea. More than 175 years later, the company he started is still an industry leader in new agriculture innovations. This article tells Deere's story of innovation.

Transcript of "The Original Steel Plow" Text

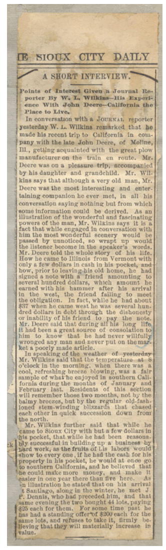
Source-Dependent Questions

- How did John Deere get the idea for his invention?
- Make an inference - who would benefit from Deere's steel plow?
- In what ways did a steel plow represent an innovation or improvement to how fields were plowed?

Citation Information

"The Original Steele Plow," 1882. Courtesy of John Deere

"A Short Interview" with John Deere, ca. 1886



...E SIOUX CITY DAILY

A SHORT INTERVIEW.

Points of Interest Given a Journal Reporter By W. L. Wilkins—His Experience With John Deere—California the Place to Live.

In conversation with a JOURNAL reporter yesterday W. L. Wilkins remarked that he made his recent trip to California in company with the late John Deere, of Moline, Ill., getting acquainted with the great plow manufacturer on the train en route. Mr. Deere was on a pleasure trip, accompanied by his daughter and grandchild. Mr. Wilkins says that although a very old man, Mr. Deere was the most interesting and entertaining companion he ever met, in all his conversation saying nothing but from which some information could be derived. As an illustration of the wonderful and fascinating powers of the man, Mr. Wilkins says it is a fact that while engaged in conversation with him the most wonderful scenery would be passed by unnoticed, so wrapt up would the listener become in the speaker's words. Mr. Deere told the whole story of his life. How he came to Illinois from Vermont with only a few dollars in cash in his pocket, and how, prior to leaving his old home, he had signed a note with a friend amounting to several hundred dollars, which amount he earned with his hammer after his arrival in the west, the friend failing to meet the obligation. In fact, while he had about $37 when he came west he was several hundred dollars in debt through the dishonesty or inability of his friend to pay the note. Mr. Deere said that during all his long life it had been a great source of consolation to him to know that he had never willfully wronged any man and never put on the market a poorly made article.

In speaking of the weather of yesterday Mr. Wilkins said that the temperature at 8 o'clock in the morning, when there was a cool, refreshing breeze blowing, was a fair sample of what he enjoyed in southern California during the months of January and February last. Residents of this section will remember those two months, not by the balmy breezes, but by the regular old-fashioned stem-winding blizzards that chased each other in quick succession down from the north.

Mr. Wilkins further said that while he came to Sioux City with but a few dollars in his pocket, that while he had been reasonably successful in building up a business by hard work, as the fruits of his labors would show to every one, if he had the cash for his property in his pocket, he would at once go to southern California, and he believed that he could make more money, and make it easier in one year there than five here. As an illustration he stated that on his arrival at Santiago, along in the winter, he met J. P. Dennis, who had preceded him, and that same evening the two bought 44 lots, paying $25 each for them. For some time past he has had a standing offer of $200 each for the same lots, and refuses to take it, firmly believing that they will materially increase in value.

Courtesy of the State Historical Society of Iowa, "A Short Interview," The Sioux City Daily, ca. 1886

Description

W. L. Wilkings describes in this article in *The Sioux City Daily* a conversation he had with John Deere while the two were traveling to California on a train. This conversation happened shortly before Deere died in May 1886.

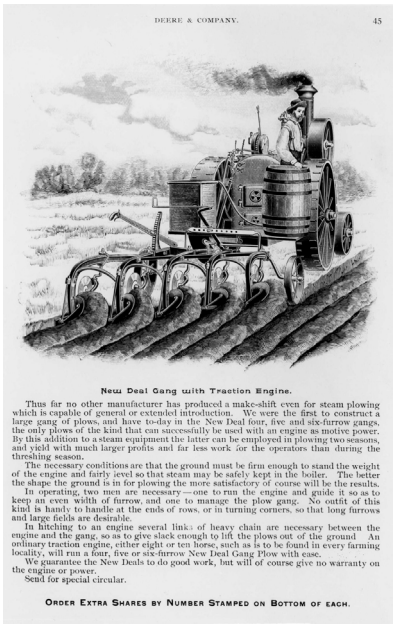
[Full Transcript of "A Short Interview"]

[Transcribed Excerpt from "A Short Interview"]

Source-Dependent Questions

- How did John Deere respond when his friend did not pay back the loan?
- Make an inference: What traits of good character does Wilkins report that Deere had? Use evidence from the text to support your answer?

New Deal Gang Plow with Traction Engine Advertisement from John Deere, 1889



DEERE & COMPANY. 45

New Deal Gang with Traction Engine.

Thus far no other manufacturer has produced a make-shift even for steam plowing which is capable of general or extended introduction. We were the first to construct a large gang of plows, and have to-day in the New Deal four, five and six-furrow gangs, the only plows of the kind that can successfully be used with an engine as motive power. By this addition to a steam equipment the latter can be employed in plowing two seasons, and yield with much larger profits and far less work for the operators than during the threshing season.

The necessary conditions are that the ground must be firm enough to stand the weight of the engine and fairly level so that steam may be safely kept in the boiler. The better the shape the ground is in for plowing the more satisfactory of course will be the results.

In operating, two men are necessary—one to run the engine and guide it so as to keep an even width of furrow, and one to manage the plow gang. No outfit of this kind is handy to handle at the ends of rows, or in turning corners, so that long furrows and large fields are desirable.

In hitching to an engine several links of heavy chain are necessary between the engine and the gang, so as to give slack enough to lift the plows out of the ground. An ordinary traction engine, either eight or ten horse, such as is to be found in every farming locality, will run a four, five or six-furrow New Deal Gang Plow with ease.

We guarantee the New Deals to do good work, but will of course give no warranty on the engine or power.

Send for special circular.

ORDER EXTRA SHARES BY NUMBER STAMPED ON BOTTOM OF EACH.

Courtesy of John Deere, "New Deal Gang with Traction Engine," Deere & Company, 1889

Description

It was not until 1918 that John Deere's company introduced a tractor. However, they started making implements for and even partnering first with steam engine manufacturers and then manufacturers of gasoline and kerosene tractors. This advertisement for a "gang plow" was like a row of four, five or six of Deere's original steel plows all connected together. As new companies emerged, Deere & Company had to adjust and adapt in order to provide the products that their customers wanted and remain competitive in the market.

Transcript of the New Deal Gang Plow with Traction Engine Advertisement

Source-Dependent Questions

- How many furrows (rows) did a New Deal Gang Plow have?
- How did competition influence Deere & Company's production of goods?

Citation Information

"New Deal Gang with Traction Engine," Deere & Company, 1889. Courtesy of John Deere

Brochure about John Deere's Gilpin Sulky Plow, 1895

Courtesy of John Deere, "John Deere Plows. The Gilpin Sulky," Deere & Company, 1895

Description

Farm implements were designed to make work easier and allow a farmer to produce more each year. Companies had to work hard to earn the farmer's business. This brochure points out the strong features of the Gilpin Sulky Plow that John Deere manufactured.

Transcript of Brochure about John Deere's Gilpin Sulky Plow

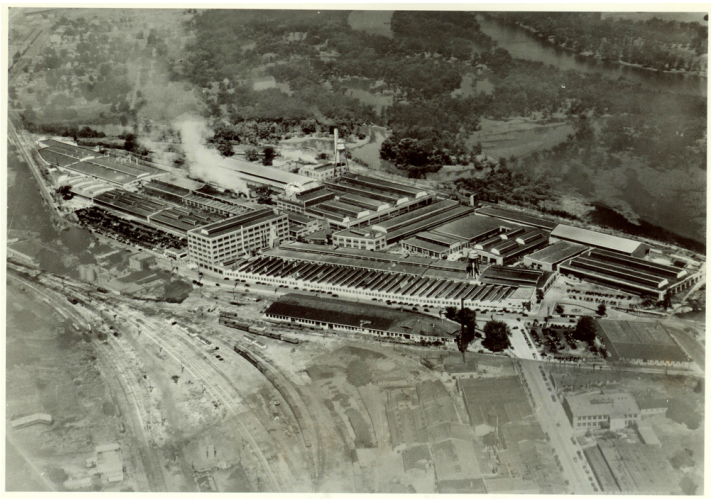
Source-Dependent Questions

- According to this brochure, why is the Gilpin Sulky Plow a good investment for a farmer?
- How will this implement help a farmer? Use evidence from the text to support your answer.

Citation Information

"John Deere Plows. The Gilpin Sulky," Deere & Company, 1895. Courtesy of John Deere

Aerial View of the John Deere Tractor Company in Waterloo, Iowa, 1944



Courtesy of the State Historical Society of Iowa, Des Moines Register & Tribune, 1944

Description

In the late 1800s and early 1900s, farmers all over America turned to tractors with gasoline and diesel-powered engines. But it was not until 1918 that Deere & Company started producing them. Even then, it was under a different name because Deere & Company bought out the Waterloo Gasoline Engine Company in Waterloo, Iowa. According to the company website, they sold 5,634 Waterloo Boy tractors in their first year. They continued manufacturing the popular "Waterloo Boy" tractor under that brand name until 1923 when John Deere came out with the John Deere Model D. In 1927, John Deere came out with its first harvester. This is how the John Deere Tractor Company came to be located in Waterloo, Iowa, and they are still there today. This photograph from 1944 shows a large network of buildings, railroad lines and roads. There is even two water towers to supply the factory.

Source-Dependent Questions

- Think about the community that a John Deere factory was/is located in. How big of an impact does Deere & Company have on non-farmers in and around that community?
- Look at the roof on each building. Most of them seem to have a part that is built up higher than the rest of the roof and has windows in it. Why do you think that may have been built that way?

Farmer Operating Corn Picker with John Deere Tractor, ca. 1945

Courtesy of the State Historical Society of Iowa, ca. 1945

Description

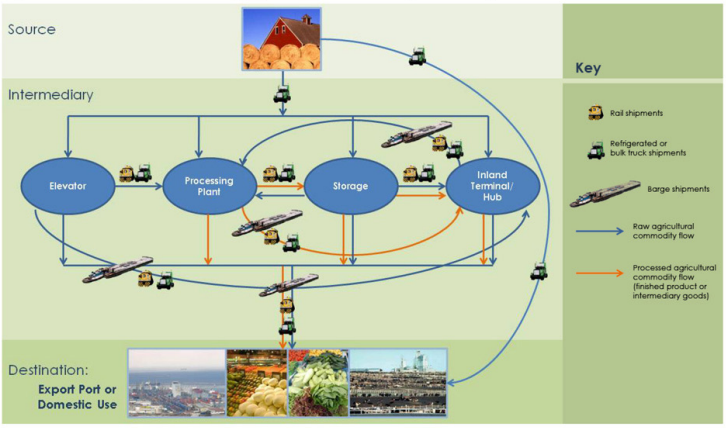
While John Deere's original invention focused on plowing the land, Deere & Company expanded their product lines to include other parts of farming as well. Only four years after introducing their first John Deere brand tractor, the company introduced their first harvester, the John Deere No. 2. In this photograph, a farmer drives a John Deere tractor with a corn picker and wagon both attached to the tractor. This corn picker harvests the ear from the plant but does not shell the kernels from the cob. That is another step in the farmer's production before selling the corn.

Source-Dependent Questions

- How many people does it take to operate this equipment? How does that impact a farmer financially? Compare this photograph to the image of **"Field Workers Harvesting Sweet Corn."**
- How did the inventions that John Deere made impact the farmer in this photograph?

Flowchart of U.S. Agricultural Supply Chain for Raw and Processed Products, 2009

Figure 1-1: U.S. agricultural supply chain for raw and processed products



Courtesy of USDA, "U.S. Agricultural Supply Chain for Raw and Processed Products," pp. 2, Study of Rural Transportation Issues, United States Department of Agriculture (USDA), 2009

Description

This infographic shows the modes of transportation that raw and processed agricultural products travel from source to destination. It was featured in a study that looked at the infrastructure that the United States has in place to move agricultural goods from one way to another. The availability of transportation allows farmers to get their crops to the locations where they are needed.

Transcript of Flowchart of U.S. Agricultural Supply Chain for Raw and Processed Products

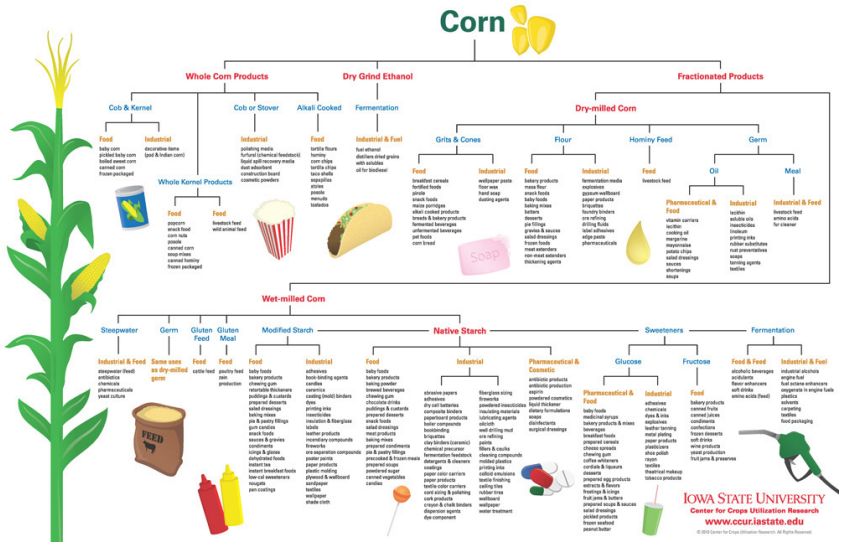
Source-Dependent Questions

- An example of an intermediary good made with corn is corn meal, which is the main ingredient in corn bread muffins. Using this infographic, tell the story of where corn meal travels from the field to a person's home where it is made into a corn bread muffin.
- Based on this infographic, does all corn that is exported out of the United States leave the country as a raw agricultural product? Explain why or why not.

Citation Information

"U.S. Agricultural Supply Chain for Raw and Processed Products," pp. 2, Study of Rural Transportation Issues, United States Department of Agriculture (USDA), 2009. Courtesy of USDA

Flowchart Showing the Uses of Corn, 2009



Courtesy of Iowa State University, "Corn," Center for Crops Utilization Research, Iowa State University, 2009

Description

Corn is used in a wide variety of products from frozen corn for people to eat to livestock feed to explosives to soaps, to ethanol and many more. The National Corn Growers Association created this chart in 2009 to help people understand all that corn goes into.

Transcript of Flowchart Showing the Uses of Corn

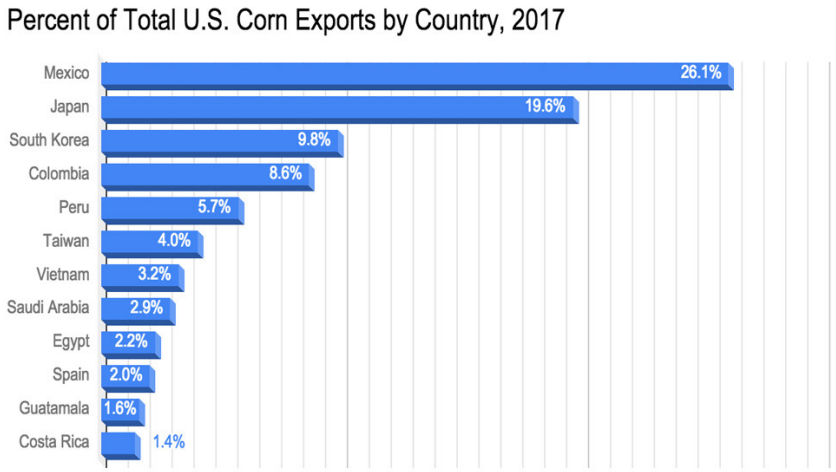
Source-Dependent Questions

- Which uses of corn surprised you?
- One use of corn is in breakfast cereals. Make a list of all of the different jobs it would take to go from a farmer growing corn to a consumer eating the breakfast cereal. Check your ideas using **"U.S. Agricultural Supply Chain for Raw and Processed Products" infographic** to help.

Citation Information

"Corn," Center for Crops Utilization Research, Iowa State University, 2009. Courtesy of Iowa State University

"Percent of Total U.S. Corn Exports by Country" Graph, 2017



Courtesy of USDA, "Percent of Total U.S. Corn Exports by Country, 2017," Foreign Agricultural Service, United States Department of Agriculture (USDA), 2017

Description

The Foreign Agricultural Service department of the USDA published a chart showing the countries who received corn that was exported from the United States during the marketing year 2017 through 2018. This means the corn was grown during the summer of 2017, harvested in the fall of 2017, and sold in late 2017 or in the winter/spring of 2018.

Transcript of "Percent of Total U.S. Corn Exports by Country" Graph

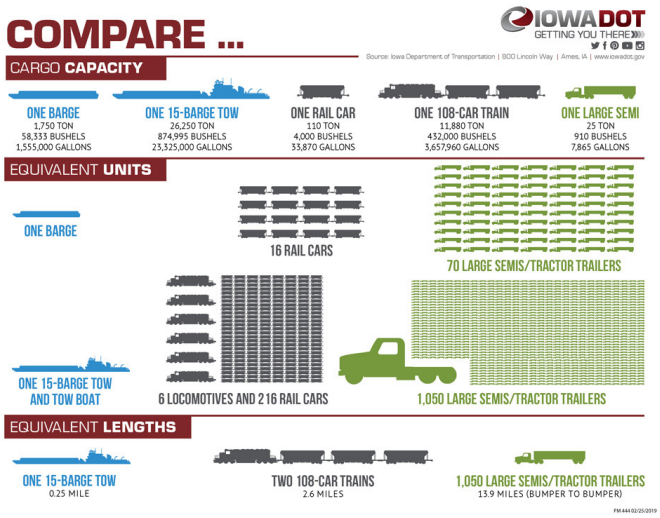
Source-Dependent Questions

- According to this graph, which continent(s) receive the most grain from the United States?
- For how many of the countries that the United States exports to will the corn travel on a ship or ocean liner?

Citation Information

"Percent of Total U.S. Corn Exports by Country, 2017," Foreign Agricultural Service, United States Department of Agriculture (USDA), 2017. Courtesy of USDA

"Compare... Cargo Capacity" Infographic, February 25, 2019



Courtesy of Iowa DOT, "Compare... Cargo Capacity," Iowa Department of Transportation (Iowa DOT), 25 February 2019

Description

This infographic was produced by the Iowa Department of Transportation in 2016 to show the volume of cargo capacity and the equivalent units of semi-trucks, rail cars and barges. For example, one 15-barge tow can haul the same amount of grain as 1,050 semi-truck trailers or 216 rail cars.

Transcript of "Compare... Cargo Capacity" Infographic

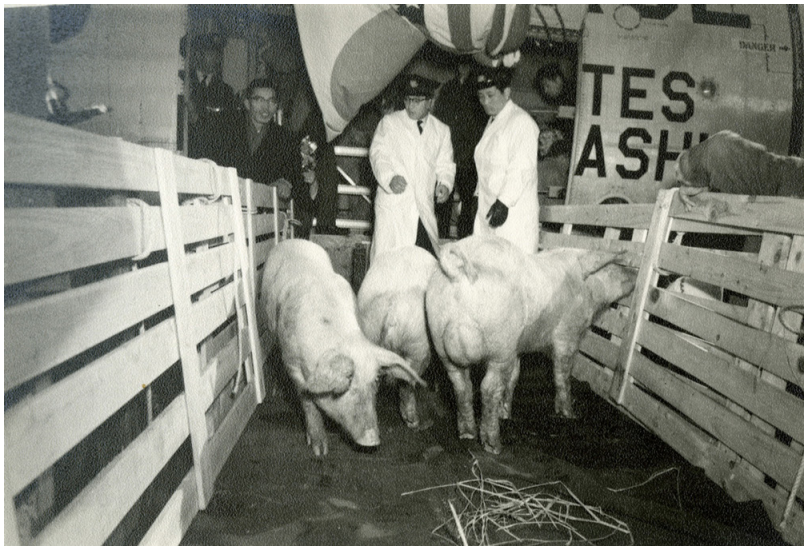
Source-Dependent Questions

- How many semi-truck loads of corn fit into one railcar?
- In order to load a 15-barge tow, how many semi-trucks would be needed?
- What are some of the potential advantages and disadvantages of using rail lines opposed to trucks?

Citation Information

"Compare... Cargo Capacity," Iowa Department of Transportation (Iowa DOT), 25 February 2019. Courtesy of Iowa DOT

Iowa Hog Lift to Japan, 1960



Courtesy of Iowa State University Special Collections, Goeppinger, Walter, Iowa State University, 1960

Description

The image shows hogs from Iowa being taken off a plane in Yamanashi Prefecture in Japan. There were 36 hogs sent from Iowa farms, with 35 arriving alive in Japan. Master Sergeant Richard Thomas inspired this outreach from Iowans to the citizens of Yamanashi, Japan. Thomas served in the United States Air Force, had been stationed in Japan and got to know many people from Yamanashi. When he heard about the damage from the typhoons, he wanted to do something to help.

Source-Dependent Questions

- Master Sergeant Richard Thomas had been stationed in Yamanashi, Japan. Why do you think he wanted to help that community after the devastating typhoons?
- Transportation has changed since 1960. Imagine this "hog lift" was took place today and use what you know to predict how the transportation would be different.

Citation Information

Goeppinger, Walter, Iowa State University, 1960. Courtesy of Iowa State University Special Collections

Lee Norris' Truck Loaded with Hogs, 1960

Courtesy of United States Air Force, Magano, Arthur, 1960

Description

Lee Norris operated a sale barn on his farm near Freemont, Iowa, for many years. In the 1950s, representatives from Japan would often attend the hog auctions at Mr. Norris' farm because of the high-quality purebred Hampshire hogs that he raised and sold. When Master Sgt. Richard Thomas wanted to arrange a hog lift to Japan to help repopulate the hog population after the typhoons, Norris was ready. Seven of the 39 hogs that went to Japan were from Norris' farm, and they were transported from Norris' farm to the Des Moines airport in this truck. Japanese buyers continued to return to Norris' farm to buy hogs for more than twenty years after the 1960 hog lift.

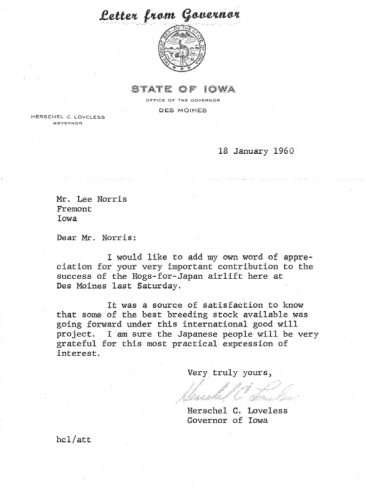
Source-Dependent Questions

- Look closely at the photo - there are seven hogs in this truck. Where are the hogs? What preparations would Lee Norris, the owner of the hogs, need to do to his truck to drive the hogs to Des Moines
- Lee Norris was known for his high-quality purebred Hampshire hogs. Why would purebred hogs be a good choice to send to Japan?

Citation Information

Magano, Arthur, 1960. Courtesy of United States Air Force

Letter from Governor Herschel Loveless to Lee Norris about the Hog Lift, January 18, 1960



Letter from Governor

STATE OF IOWA

OFFICE OF THE GOVERNOR

DES MOINES

HERSCHEL C. LOVELESS
GOVERNOR

18 January 1960

Mr. Lee Norris
Fremont
Iowa

Dear Mr. Norris:

I would like to add my own word of appreciation for your very important contribution to the success of the Hogs-for-Japan airlift here at Des Moines last Saturday.

It was a source of satisfaction to know that some of the best breeding stock available was going forward under this international good will project. I am sure the Japanese people will be very grateful for this most practical expression of interest.

Very truly yours,

Herschel C. Loveless
Governor of Iowa

hcl/att

Courtesy Elnora Norris, Loveless, Herschel C., 18 January 1960

Description

Governor Herschel Loveless was present when the hogs were loaded onto the U.S. Air Force cargo plane bound for Japan in 1960. In this letter, Governor Loveless thanks Lee Norris for his involvement in the hog lift. Norris provided seven of the 39 hogs that were sent to Japan.

Transcript of Governor Herschel Loveless' Letter to Lee Norris

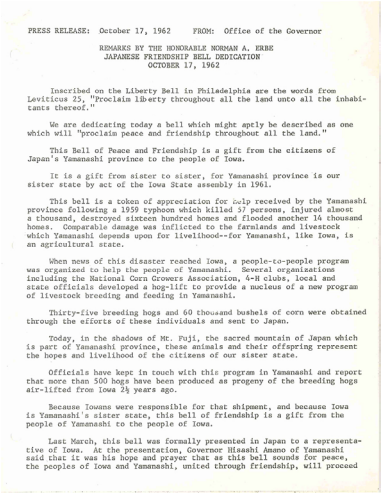
Source-Dependent Questions

- What was Governor Herschel Loveless grateful for?
- Make an argument for why this hog lift was a good idea from a humanitarian perspective and an economic perspective.

Citation Information

Loveless, Herschel C., 18 January 1960. Courtesy Elnora Norris

Speech by Governor Norman Erbe on the Dedication of the Japanese Friendship Bell, October 17, 1962



PRESS RELEASE: October 17, 1962 FROM: Office of the Governor

REMARKS BY THE HONORABLE NORMAN A. ERBE
JAPANESE FRIENDSHIP BELL DEDICATION
OCTOBER 17, 1962

Inscribed on the Liberty Bell in Philadelphia are the words from Leviticus 25, "Proclaim Liberty throughout all the land unto all the inhabitants thereof."

We are dedicating today a bell which might aptly be described as one which will "proclaim peace and friendship throughout all the land."

This Bell of Peace and Friendship is a gift from the citizens of Japan's Yamanashi province to the people of Iowa.

It is a gift from sister to sister, for Yamanashi province is our sister state by act of the Iowa State assembly in 1961.

This bell is a token of appreciation for help received by the Yamanashi province following a 1959 typhoon which killed 37 persons, injured almost a thousand, destroyed sixteen hundred homes and flooded another 14 thousand homes. Comparable damage was inflicted to the farmlands and livestock which Yamanashi depends upon for livelihood--for Yamanashi, like Iowa, is an agricultural state.

When news of this disaster reached Iowa, a people-to-people program was organized to help the people of Yamanashi. Several organizations including the National Corn Growers Association, 4-H clubs, local and state officials developed a hog-lift to provide a nucleus of a new program of livestock breeding and feeding in Yamanashi.

Thirty-five breeding hogs and 60 thousand bushels of corn were obtained through the efforts of these individuals and sent to Japan.

Today, in the shadows of Mt. Fuji, the sacred mountain of Japan which is part of Yamanashi province, these animals and their offspring represent the hopes and livelihood of the citizens of our sister state.

Officials have kept in touch with this program in Yamanashi and report that more than 500 hogs have been produced as progeny of the breeding hogs air-lifted from Iowa 2½ years ago.

Because Iowans were responsible for that shipment, and because Iowa is Yamanashi's sister state, this bell of friendship is a gift from the people of Yamanashi to the people of Iowa.

Last March, this bell was formally presented in Japan to a representative of Iowa. At the presentation, Governor Hisashi Amano of Yamanashi said that it was his hope and prayer that as this bell sounds for peace, the peoples of Iowa and Yamanashi, united through friendship, will proceed

Courtesy of the State Historical Society of Iowa, Erbe, Norman A., 17 October 1962

Description

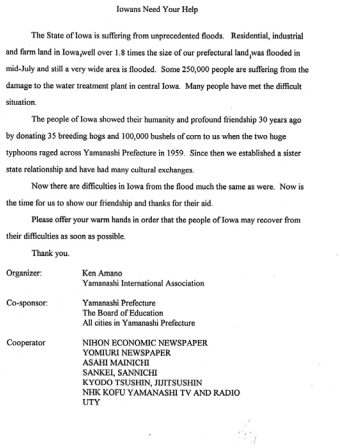
The Bell of Peace and Friendship was given as a gift from the Yamanashi Province in Japan to the people of Iowa in 1962, about two and a half years after the 1960 hog lift from Iowa to Yamanashi. This is Iowa Governor Norman Erbe's speech at the dedication ceremony on the Iowa State Capitol grounds on October 17, 1962.

Transcript of the Speech by Governor Norman Erbe on the Dedication of the Japanese Friendship Bell

Source-Dependent Questions

- What was Yamanashi, Japan's response to the 1960 hog lift?
- According to these remarks, what was the impact of the 1960 hog lift two and a half years after it happened? Use evidence from the text in your answer.

Governor of Yamanashi, Japan, Asking Citizens to Help Iowans Suffering from Flood Damage, 1993



Iowans Need Your Help

The State of Iowa is suffering from unprecedented floods. Residential, industrial and farm land in Iowa,well over 1.8 times the size of our prefectural land,was flooded in mid-July and still a very wide area is flooded. Some 250,000 people are suffering from the damage to the water treatment plant in central Iowa. Many people have met the difficult situation.

The people of Iowa showed their humanity and profound friendship 30 years ago by donating 35 breeding hogs and 100,000 bushels of corn to us when the two huge typhoons raged across Yamanashi Prefecture in 1959. Since then we established a sister state relationship and have had many cultural exchanges.

Now there are difficulties in Iowa from the flood much the same as were. Now is the time for us to show our friendship and thanks for their aid.

Please offer your warm hands in order that the people of Iowa may recover from their difficulties as soon as possible.

Thank you.

Organizer: Ken Amano
Yamanashi International Association

Co-sponsor: Yamanashi Prefecture
The Board of Education
All cities in Yamanashi Prefecture

Cooperator NIHON ECONOMIC NEWSPAPER
YOMIURI NEWSPAPER
ASAHI MAINICHI
SANKEI, SANNICHI
KYODO TSUSHIN, JIJITSUSHIN
NHK KOFU YAMANASHI TV AND RADIO
UTY

Courtesy of Iowa Sister States, Amano, Ken, Yamanashi International Association, 1993

Description

Governor Terry Branstad invited Governor Ken Amano of Yamanashi, Japan, to visit Iowa in May 1993 to attend the Iowa State Fair. At that time, Branstad had no way of knowing the devastating flood that would impact thousands across the state of Iowa in 1993. After learning of the problem, Amano sent this request to the people of Yamanashi asking them to help Iowans. When Amano visited Iowa in August of 1993, he gave Branstad $300,000 to help with flood relief.

Transcript of a Press Release from Governor of Yamanashi, Japan, Asking Citizens to Help Iowans Suffering from Flood Damage in 1993

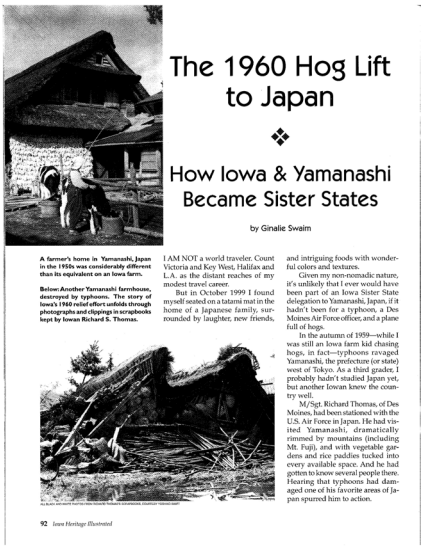
Source-Dependent Questions

- How does a sister state relationship connect Iowa and Yamanashi, Japan?
- What is Governor Ken Amano asking the people of Yamanashi to do?

Citation Information

Amano, Ken, Yamanashi International Association, 1993. Courtesy of Iowa Sister States

"The 1960 Hog Lift," 2001



The 1960 Hog Lift to Japan

❖

How Iowa & Yamanashi Became Sister States

by Ginalie Swaim

A farmer's home in Yamanashi, Japan in the 1950s was considerably different than its equivalent on an Iowa farm.

Below: Another Yamanashi farmhouse, destroyed by typhoons. The story of Iowa's 1960 relief effort unfolds through photographs and clippings in scrapbooks kept by Iowan Richard S. Thomas.

I AM NOT a world traveler. Count Victoria and Key West, Halifax and L.A. as the distant reaches of my modest travel career.

But in October 1999 I found myself seated on a tatami mat in the home of a Japanese family, surrounded by laughter, new friends, and intriguing foods with wonderful colors and textures.

Given my non-nomadic nature, it's unlikely that I ever would have been part of an Iowa Sister State delegation to Yamanashi, Japan, if it hadn't been for a typhoon, a Des Moines Air Force officer, and a plane full of hogs.

In the autumn of 1959—while I was still an Iowa farm kid chasing hogs, in fact—typhoons ravaged Yamanashi, the prefecture (or state) west of Tokyo. As a third grader, I probably hadn't studied Japan yet, but another Iowan knew the country well.

M/Sgt. Richard Thomas, of Des Moines, had been stationed with the U.S. Air Force in Japan. He had visited Yamanashi, dramatically rimmed by mountains (including Mt. Fuji), and with vegetable gardens and rice paddies tucked into every available space. And he had gotten to know several people there. Hearing that typhoons had damaged one of his favorite areas of Japan spurred him to action.

92 *Iowa Heritage Illustrated*

Courtesy of the State Historical Society of Iowa, Swaim, Ginalie, Iowa Heritage Illustrated, 2001

Description

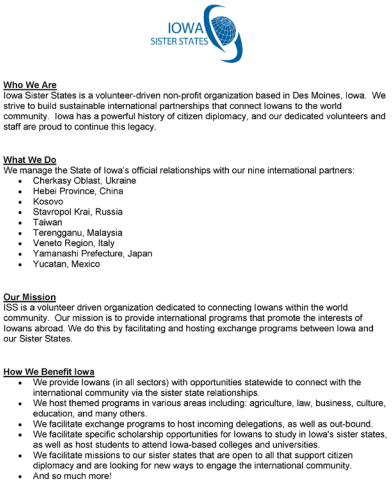
In a feature article in *Iowa Heritage Illustrated* from 2001, Ginalie Swaim writes how Master Sergeant Richard Thomas, a Des Moines native who was stationed with the U.S. Air Force in Japan, heard about two terrible typhoons in Yamanashi and mobilized a group of Iowans to replenish hog population, which had been wiped out by the storms. This began a "Sister State" relationship between Yamanashi, Japan, and Iowa. Now, Iowa Sister States has developed connections in nine countries and works to connect agricultural and diplomatic connections between the countries.

Transcript of "The 1960 Hog Lift" Article

Source-Dependent Questions

- What happened in Yamanashi, Japan, that caused Iowans to send hogs there, and who made the connections to make that possible?
- How did the country and people of Japan show they were grateful for the gift from Iowa?

"Iowa Sister States Agriculture Impact," 2019



IOWA SISTER STATES

Who We Are
Iowa Sister States is a volunteer-driven non-profit organization based in Des Moines, Iowa. We strive to build sustainable international partnerships that connect Iowans to the world community. Iowa has a powerful history of citizen diplomacy, and our dedicated volunteers and staff are proud to continue this legacy.

What We Do
We manage the State of Iowa's official relationships with our nine international partners:

- Cherkasy Oblast, Ukraine
- Hebei Province, China
- Kosovo
- Stavropol Krai, Russia
- Taiwan
- Terengganu, Malaysia
- Veneto Region, Italy
- Yamanashi Prefecture, Japan
- Yucatan, Mexico

Our Mission
ISS is a volunteer driven organization dedicated to connecting Iowans within the world community. Our mission is to provide international programs that promote the interests of Iowans abroad. We do this by facilitating and hosting exchange programs between Iowa and our Sister States.

How We Benefit Iowa

- We provide Iowans (in all sectors) with opportunities statewide to connect with the international community via the sister state relationships.
- We host themed programs in various areas including: agriculture, law, business, culture, education, and many others.
- We facilitate exchange programs to host incoming delegations, as well as out-bound.
- We facilitate specific scholarship opportunities for Iowans to study in Iowa's sister states, as well as host students to attend Iowa-based colleges and universities.
- We facilitate missions to our sister states that are open to all that support citizen diplomacy and are looking for new ways to engage the international community.
- And so much more!

Courtesy of Iowa Sister States, "Iowa Sister States Agriculture Impact," 2019

Description

Founded in 1985, the Iowa Sister States organization has worked to connect Iowa culture and agriculture with "sister cities" in nine countries around the world. The organization hosts exchange programs with Iowans visiting these sister cities, as well as groups from the sister cities visiting Iowa. It is an organization that seeks to help people from different cultures understand, do business with and help each other.

Transcript of "Iowa Sister States Agriculture Impact"

Source-Dependent Questions

- How has Iowa Sister States impacted Iowans? How has Iowa Sister States impacted people in other countries? Use evidence from the text in your answer.
- Use evidence from the text to list ways that farmers in Iowa participate in a global economy.

Citation Information

"Iowa Sister States Agriculture Impact," 2019. Courtesy of Iowa Sister States