Goldie's
HISTORY KITS

Iowa's Corn and Agriculture Industry

TEACHER MANUAL

STATE HISTORICAL SOCIETY OF IOWA
IOWA DEPARTMENT OF CULTURAL AFFAIRS

LIBRARY OF CONGRESS
TEACHING WITH PRIMARY SOURCES

Table of Contents

Instructions

What is a Goldie's History Kit?

This Goldie's History Kit is designed by the State Historical Society of Iowa for elementary-level educators to instruct on Iowa's corn and agriculture industry. It includes the corresponding Read Iowa History lessons and educational components that have been tested and vetted as part of the State Historical Society of Iowa's Goldie's Kids Club that focus on literacy, visual literacy and Iowa history. There are detailed instruction to assist educators to incorporate these activities in a classroom. This kit also was developed to reflect the Iowa Core Social Studies and Literacy Standards. **Goldie's Kids Club** is a free program developed by the State Historical Society of Iowa to introduce children aged 12 and under to Iowa history – starting with Goldie, the eastern goldfinch, which is the state bird.

What's Included

Read Iowa History

- Structured lesson plans integrating primary sources and literacy skills

Read Aloud

- 4 books to read aloud to students
- Text-dependent questions

History Mystery

- Students investigate objects from the State Historical Museum of Iowa collection

Think Like... Cards

- Cards featuring prominent Iowans in history to integrate with lesson plans

Read Iowa History

Read Iowa History is a curriculum project that provides elementary-level educators with primary source lessons that are directly tied to key literacy skills and the **State Historical Society of Iowa's Primary Source Sets**. These lessons provide structured lesson plans that integrate social studies and literacy with accompanying worksheets and hands-on activities to promote the use of primary sources at an elementary level.

Read Aloud

This Goldie's History Kit provides four books related to Iowa's corn and agriculture industry. This read aloud activity combines literacy and Iowa history, and offers text-dependent questions to facilitate discussion around the book.

History Mystery

History Mystery is designed to challenge students to use their skills of deduction, observation and critical thinking to identify the multiple artifacts included in this activity. All objects are from the State Historical Museum of Iowa's collection, providing students with a unique opportunity to interact with museum artifacts from their own classrooms. Individual students or small groups will work as "history detectives" to figure out the nature of the object, its use and its relationship to the theme through the use of photographs and videos.

Think Like... Cards

The "Think Like..." activity includes a set of cards to encourage students to think about history through multiple perspectives. The cards include questions for students to use to guide their process of understanding Iowa's corn and agriculture industry from different points of view. Every kit includes five universal cards (geographer, economist, journalist, economist and political scientist) and two additional ones related directly to the topic. Each card provides background information about a notable Iowan to provide a direct Iowa history connection.

Instructions

How To Use The Kit

This kit is designed to provide structured lessons and supplemental activities to educators with the freedom to decide what options are best for their classrooms and best fit into their curriculum. Educators are encouraged to first explore the manual and its four main elements (Read Iowa History, Read Aloud, History Mystery and Think Like… cards) to design a lesson for students that will fit their needs. Educators are welcome to alter any lesson plans, worksheets and assessments in the kit. Each of the four main sections include detailed instructions and suggested formats on how to use each section individually or interchangeably. Below are some suggested recommendations and tips to navigate the manual and activities.

Begin with Read Iowa History

The Read Iowa History lesson plans are structured and provide a more defined outline for integrating primary sources in the classroom. You can use the primary source lesson plans in the order provided, or however you see fit. Read Iowa History – as all four components – has background information, a materials list, easily reproduceable worksheets and instructions to prepare your lesson.

> **Goldie's History Kit Connection:** There are Goldie icons in Read Iowa History to highlight connections that you could integrate with an activity from Read Aloud, History Mystery or the Think Like… cards activity.

Read Aloud, History Mystery & Think Like… Cards

These three components can be used as a separate lesson or you can integrate an element of an activity to Read Iowa History to provide more hands-on experience within the lesson. At the beginning of each of these sections in the manual, there are detailed introductions to highlight what is needed for that section (i.e. books are used for Read Aloud, photos and videos with History Mystery) and suggested formats to guide the sections. For Read Aloud, this includes additional information about the book and historical context. For History Mystery, this includes different formats to assist in the activity depending on time constraints and detailed information about each object, as well as a worksheet and questions to help students identify each object and its historical significance. Think Like… cards also provide instructions, and of the three, can be a much more flexible activity that can be integrated into a more structured lesson plan.

Additional Digital Access

Some elements of the kit will need to be digitally accessed. There is a USB flash drive in the kit box. It includes a digital version of this manual, worksheets, photographs and video for History Mystery and some optional supplemental materials. This content also is available on a **Google Drive folder**, where materials can be downloaded.

Register for Free Goldie's History Kit Merchandise

Receive Goldie's History Kit merchandise by submitting your contact information to the **online form**.

READ IOWA HISTORY

EDUCATOR MATERIALS

Iowa's Corn and Agriculture Industry

LESSON PLAN FOR SUPPORTING QUESTION

How has farming in Iowa seen continuity and change?

4TH GRADE

STATE HISTORICAL SOCIETY OF IOWA
IOWA DEPARTMENT OF CULTURAL AFFAIRS

READ IOWA HISTORY

Introduction to Read Iowa History

About Read Iowa History

Through the Library of Congress Teaching with Primary Sources grant, the State Historical Society of Iowa developed Read Iowa History — free, downloadable K-5 lesson plans to build and develop reading and critical thinking skills with primary sources in the classroom.

Primary sources (from the digital **Primary Source Sets collection**) are used to help students learn from multiple perspectives, develop primary source-based claims and evidence, and to interpret documents and images of the past. These lessons were developed with the Iowa Core Social Studies and Literacy Standards. Each unit includes ready-to-use source material, worksheets, educator lesson plans and assessment tools and activities. You, the educator, are encouraged to explore the unit, and use materials as you see fit for your students. You are welcome to alter lesson plans, worksheets and assessments to best align with their curriculum.

Please check out the **Primary Source Sets toolkit** to learn more about using primary sources in the classroom.

What's Included

Educator Materials

Sources are accompanied by an educator lesson plan. This plan includes: the unit compelling question, unit supporting question, objectives, background information, vocabulary lists or cards, a materials list, instructions and Goldie's History Kit Connections (see below). There also is a "formative assessment" to wrap up each part of the unit and to check for comprehension. You are welcome to use the activities that are suggested or create your own.

Goldie's History Kit Connection: A Kit Connection is designated with the Goldie icon, as seen on the left. This signals there is an opportunity in the Read Iowa History lesson plan to integrate another element of the kit. This could include a Think Like... card, a storybook or a History Mystery object.

Student Materials

Many of the unit instructions are accompanied by a worksheet that can be copied and distributed to students as they analyze the primary source(s) to assist in their application and comprehension. These worksheets are optional but may provide a structure for students to think critically about the primary sources they are analyzing. These student worksheets are available on the USB flash drive and in the **Google Drive folder** for easiest reproduction.

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

Formative Assessments, Lesson Summative Assessment and Scoring Options

The formative assessments, lesson summative assessment and possible scoring options allow you to evaluate how students comprehend and apply the knowledge they learned from the individual primary source activities. Assessment instructions, example worksheet(s) and possible scoring options are located at the end of this Read Iowa History section. Reproduceable assessment worksheets also are available on the USB flash drive and **Google Drive folder**.

Iowa's Corn and Agriculture Industry

4th Grade

Overview

Corn has been at the center of Iowa life for much of its existence, and Iowa leads the United States in corn production. The state set a 2016 record with 2.7 billion bushels of corn raised. In addition, the yield in 2018 set an all-time high with an average of 204 bushels per acre. Iowa's incredibly fertile fields stretch for miles of corn and soybeans, providing the United States with two of its most valuable exports. But as farmers are growing more crops and managing more acres, fewer Iowans are making a living as farmers. The number of farms in Iowa is on a steady decline while the average farm size continues to rise. Technology drives increasingly efficient precision farming. This begs the question: Has farming in Iowa shown more continuity or change? In this lesson, students will analyze sources and then write an argumentative essay for a fictitious competition sponsored by the Iowa State Fair board.

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Table of Contents

Compelling and Supporting Questions

4th Grade

How to Apply Read Iowa History Lessons to Other Primary Sources

The origin of Read Iowa History lessons stem from the **Primary Source Sets**, which are a collection of primary sources that focus on a topic and are structured under a compelling question and multiple supporting questions (typically three). Five or six primary sources are used to address and help students answer a single supporting question. Read Iowa History takes one supporting question, the primary sources addressing that question and instructions (divided into parts) to integrate these primary sources in the classroom through different activities.

These lessons, instructions, worksheets, tools and assessment suggestions can be applied to all of the K-5 **Primary Source Sets**.

Unit Compelling Question

The compelling question drives students to discuss, inquire and investigate the topic of a unit of understanding.

How does Iowa corn impact Iowans and the world?

Unit Supporting Questions

Supporting questions scaffold instruction to help students answer the compelling question. Their aim is to stimulate thought, to provoke inquiry and spark more questions. The supporting question that is highlighted above is the question that was used in this Read Iowa History. The **bolded** question below is the supporting question for this Read Iowa History unit.

1) How has farming in Iowa seen continuity and change?
2) What impact did John Deere have on farming in Iowa?
3) Where does Iowa corn go and how is it used?
4) What is Iowa Sister States' role in global agricultural opportunities?

Read Iowa History: Iowa Corn and Agriculture Industry

This Read Iowa History lesson addresses "How does Iowa corn impact Iowans and the world?" and "How has farming in Iowa seen continuity and change?" and includes lesson plans, worksheets, suggested assessments and other tools.

Standards and Objectives

Iowa Core Social Studies Standards	
No.	**Standard**
SS.4.10.	Describe how societies have changed in the past and continue to change.
SS.4.22.	Infer the purpose of a primary source and from that the intended audience.
SS.4.26.	Explain how Iowa's agriculture has changed over time.

Iowa Core Literacy Standards	
No.	**Standard**
RI.4.2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI.4.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
RI.4.6	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
W.4.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
W.4.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
W.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.
W.4.8	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
SL.4.1	Engage effectively in a range of collaborative discussions (one–on–one, in groups, and teacher–led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
SL.4.3	Identify the reasons and evidence a speaker provides to support particular points.
SL.4.4	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

Objectives

- I can analyze sources: images, maps and graphs.
- I can identify and organize evidence that is relevant to the big question.
- I can form a thesis statement as a response to the big question.
- I can orally defend and negotiate my thesis statement and supporting evidence.
- I can write my thesis statement and supporting evidence with accuracy, clarity and relevant details.

Background Essay

Utilize this background essay, in whole or in parts, with students to provide further context and understanding about Iowa's corn and agriculture industry. You can read it aloud to students, utilize excerpts and introduce the vocabulary words. The essay is also referenced in parts of this Read Iowa History to assist students in their interpretation and analysis of primary sources.

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.

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.

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.

Vocabulary Words

- Bushel
- Acre
- Yield
- Cultivate
- Corn Belt
- Tractor
- Combine
- Topsoil
- Global Positioning System (GPS)

Progress of Farming and Technology

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Overview

Students will be introduced to the technology farmers use as they plant, cultivate and harvest corn. They will build historical context for how farming has changed over time. Finally, students will generate and categorize questions to help them organize the information they will gather from future sources.

Instructions

1. This brief activity is to pique student curiosity and introduce the lesson topic. Tell students that precision farming uses technology to be more efficient with time and resources. Global Positioning System (GPS)-controlled planters, sprayers and combines prevent farmers from overlapping ground, spraying too much (or not enough) chemicals and syncing with grain wagons to transfer harvested grain.

2. Show a brief video of how precision farming uses technology to be more efficient with time and resources. Recommended videos are below:
   - Farm Basics: GPS in Agriculture
   - "How to use GPS and Auto Steering..." (start at 6:32, end at 7:17)
   - "Auto Steer" (start at the beginning, end at 0:56)

Goldie's History Kit Connection: To help students understand how farming was done long ago, refer to the Hand Planter, Corn Planter and Harvester Model. Discuss the questions that accompany the objects to learn more about early farming tools.

3. After watching the videos, ask students: How has today's technology changed farming in Iowa?

4. Students will do a close reading of a secondary source in order to gain background information and essential vocabulary about the topic. Distribute a copy of the "How Does Iowa Corn Impact Iowans?" background essay and the "Build Context and Ask Questions" worksheet to each student.

Materials

- "How Does Iowa Corn Impact Iowans?" background essay
- "Build Context and Ask Questions" worksheet
- **Recommended Videos:** "How to use GPS and Auto Steering..." (start at 6:32, end at 7:17); "Auto Steer" (start at the beginning, end at 0:56)

Instructions continued on next page

Introducing Change in Farming

Instructions continued

5. Do a close reading of the passage.
   - **First reading:** You will read the article aloud without stopping to the class.
   - **Second reading:** Students will read and mark text by underlining important keywords, drawing question marks next to parts that need clarification and drawing a box around parts that help answer the main question.
   - **Third reading:** Students will re-read a third time as needed while answering the questions from the worksheet.

6. **Literacy connections:** Often, introductory phrases and transition words are used to signal to the reader that an important idea is coming next. A mini-lesson on introductory phrases and/or a mini-lesson on signal words may be important to integrate into this lesson. Question #1 from the worksheet asks students to paraphrase the main ideas that come right after the underlined introductory phrases. Note that not all of the introductory phrases were underlined in the text, only the major ones. Question #3 from the worksheet has several of the signal words that show time and are used to compare/contrast farming long ago to today.

> **Goldie's History Kit Connection:** Refer to the book ***The Biography of Corn*** to add more context about the plant that will be referred to throughout this lesson.

7. **Ask Questions:** At the end of this lesson, have students write an essay answering the question, "Has farming in Iowa shown more continuity or change?" Using what they learned in the background essay as a starting point, have students ask and then categorize questions about farming in Iowa.

8. Students independently, and then with a partner, will brainstorm questions. They will then share questions with the class. Be looking for common patterns of the kinds, or topics, of the questions. Record these as possible categories that students will use to categorize information, and thus be the topics of paragraphs, in their final essay.

9. **Formative Assessment:** As students generate questions, listen for the misconceptions that often emerge as students negotiate wording of the questions. Offer information to correct misconceptions that will not be addressed in the remainder of the lesson. It is important to be asking questions throughout this lesson to help in your assessment. Ask about the meanings of words. Ask about general farming practices.

How Does Iowa Corn Impact Iowans?

Iowa leads the United States in corn production. The state set a record in 2016 with 2.7 billion bushels of corn raised. The yield in 2018 set an all-time high with an average of 204 bushels per acre. 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.

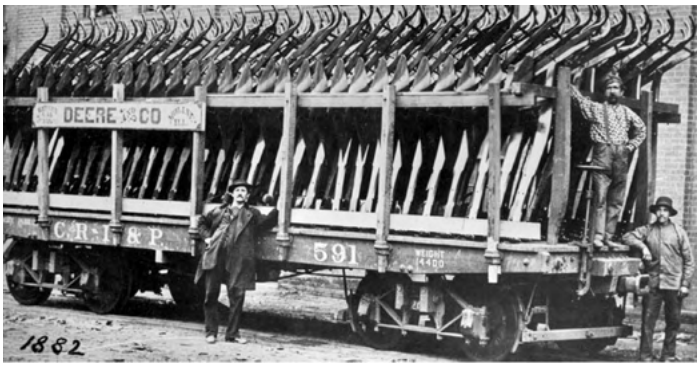
History of Corn and Iowa
Corn has been at the center of Iowa life for almost a thousand years. The ancestors of our modern corn plants first appeared in Central Mexico as a tiny ear wrapped in a tight husk. Through careful cultivation, mostly by American Indian women, the plant eventually evolved into the size and shape we know it today.

Long, long ago, growing corn 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 during 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.

Because corn is bulky, early farmers learned that it was more profitable to feed their corn to livestock, mostly hogs, and then market "the corn" as pork. In the Corn Belt, the corn/hogs market developed in the late 1800s when the railroad lines connected midwestern farmers with eastern markets.

The labor required kept fields small. The introduction of horse-drawn plows and planters in the mid-1800s allowed one farmer to cultivate much larger fields.



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. Courtesy of John Deere

With the tractor in the early 20th century and the mechanical corn picker, field sizes again took a major leap. Even with these advances in technology, farming has remained largely a family-owned and operated business.

At the time of this photo, 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. Courtesy of the State Historical Society of Iowa

Kinds of Corn in Iowa
Most of the corn grown in Iowa is "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, cosmetics, and diapers.

If you were to ask Iowans what their favorite season is, many of them would say, "Sweet corn season!" For about five weeks in the mid-summer, many people in Iowa enjoy sweet corn fresh from the field. Even though sweet corn is only about one percent of the corn grown in the United States, it's the corn that most of us are familiar with because we buy it fresh, canned, or frozen from the grocery store.

Farming Practices Change
While farming practices have evolved since early American Indians and pioneer times, one of the things that has not changed is the kind of work that happens.

In the spring, farmers prepare the soil and plant the corn seeds. Long ago, many farmers used a plow to turn the soil over before they planted the seeds in order to break up the grass roots and make it easier for the corn seeds to sprout. In the late 1800s, the mud and clay slid off John Deere's newly invented steel plow, saving the time the farmer the time previously spent stopping and removing the sticky soil. Today, most farmers no longer plow their fields because it can cause the topsoil to wash away in the sun, wind, and rain and large equipment can break the crust on the top soil.

How Does Iowa Corn Impact Iowans?

An early planting 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. Today, GPS-guided planters place one seed at a time, in precise rows across the field.

A field of sweet corn near Marengo in Iowa County, Iowa, is shown in this photograph by Carol Highsmith. The photo was taken in 2016. Courtesy of Library of Congress

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 remove the weeds so that they don't choke out the corn plants. Long, long ago, this was done by hand with a hoe. In the 1940s, farmers cultivated the fields with a cultivator attached to a tractor. Today, many farmers use a chemical to kill weeds.

In the fall, a farmer harvests the mature corn crop and either sells it or stores it to be used or sold later. Early in Iowa's history, corn was harvested by hand and put in a wagon. In the early 1900s, the first mechanical corn pickers were invented, and that made the farmer's harvest much easier. With today's large combines and other equipment, farmers can harvest 150 acres of corn per day. The way corn is harvested is one of the biggest changes in farming over time.

No matter what time of year it is, field work is very dependent on the weather. Wet and muddy fields do not allow for any work in them. In the same way, periods of drought decrease yields. While farmers can adjust growing practices, they cannot control the weather!

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.

How Does Iowa Corn Impact Iowans?

This is an example worksheet that corresponds with the instructions in Part 1 to analyze the farming photos. This version of the worksheet is for you, the educator, to fill out, add notes and utilize. A version of this worksheet is available for reproduction to students in this topic's Student Materials PDF.

Build Context

- **1st reading**: *Teacher reads aloud text.*
- **2nd reading**: *You, the student, will read aloud and mark the text. During the reading, underline vocabulary words and put a question mark (?) next to parts that need clarification. After reading, circle parts that help answer the lesson supporting question.*
- **3rd reading**: *You will re-read as needed in order to find answers these questions that help answer the lesson supporting question.*

1. Authors often signal readers that important ideas are coming up by starting sentences with transition words and introductory phrases. Look for the underlined transition words and introductory phrases in the text. In your own words, list the main ideas that come after them.

2. Write a two or three sentence summary of the "History of Corn and Iowa" section.

_____

_____

_____

3. In the text, highlight the transition words that are at the beginning of a sentence and are used to show how something changed from long ago to today. *Hint: look for words like "long ago," "today" or "in the fall"*

Ask Questions

At the end of this lesson, you will answer the question: Has farming in Iowa shown more continuity or change?

4. What questions will you need to know the answers to in order to answer the lesson supporting question?

Farming in the 1930s and 1940s

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Overview

Students will analyze three images that demonstrate farming in the 1930s and 1940s to investigate what farming was like long ago.

Source Background

In the 1930s and 1940s, tractors were becoming widely owned and used on Iowa farms. Farmers attached different implements to the tractor to do different jobs such as working up the soil, planting seeds or harvesting mature corn. These machines greatly increased the number of acres a farmer could work themselves, sparing the expense of hiring a large crew of people or putting in the many hours needed to complete the task themselves.

Instructions

1. Display the **"Farmer Working a Corn Field with a John Deere Tractor"** image. Consider displaying the image on a screen or giving students access to the primary sources via a device.

> **Goldie's History Kit Connection:** Refer to the book ***John Deere, That's Who*** to learn more about John Deere, his company's impact on farming and his connection to Iowa.

2. Distribute the **"Analyze a Primary Source" worksheet** to students to complete.

3. Discuss the background information associated with the image, and have students answer the source-dependent questions associated with the primary source.
   - Based on close observation, what season is shown in the image? Why did you make that determination?
   - Compare this image 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 images?

Instructions continued on next page

Materials

- **"Analyze a Primary Source" worksheet**
- **"Farmer Working a Corn Field with a John Deere Tractor" image**
- **"Field Workers Harvesting Sweet Corn in Grimes, Iowa" image**
- **"Farmer Operating Corn Picker with John Deere Tractor" image**
- **"Be An Image Detective!" worksheet**
- **Suggested Book:** *John Deere, That's Who!* by Tracy Nelson Maurer

Farming in the 1930s and 1940s

Instructions continued

4. If students are new to analyzing primary source images, consider using the image analysis tool, **"Be An Image Detective!"** Since the goal is to get a general overview of farming long ago, expedite the process by having students talk through the items on the analysis rather than writing down their responses.

5. Now, students will analyze a primary source with a partner. Using those same steps, students work with a partner to analyze the following two images:
   - **Field Workers Harvesting Sweet Corn in Grimes, Iowa**
     - What technology is helping these workers to do their job?
     - How is this similar to and different from how corn is harvested today?
   - **Farmer Operating Corn Picker with John Deere Tractor**
     - How many people does it take to operate this equipment? How does that impact a farmer financially? Compare this image to **"Field Workers Harvesting Sweet Corn."**
     - How did the inventions that John Deere made impact the farmer in this photograph?

> **Goldie's History Kit Connection:** To help students understand the hand tools used in harvesting corn refer to the **Corn Knife** and **Corn Husking Peg**. Discuss the questions that accompany the objects to learn more about how they are used.

6. **Formative Assessment:** Are students understanding what farming was like long ago? Are they making accurate inferences or are they wildly guessing? What words or concepts confuse them? If the same misconception is heard more than once, it needs to be addressed with the whole class during discussion.

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

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

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

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

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

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

Analyze a Primary Source

This is an example worksheet that corresponds with the instructions in Part 2 to analyze primary sources. This version of the worksheet is for you, the educator, to fill out, add notes and utilize. A version of this worksheet is available for reproduction to students in this topic's Student Materials PDF.

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

- **This Iowa farmer cultivates his corn field to get rid of weeds that may choke out the corn plants. The spacing of the plants allows for the farmer to cultivate either direction without damaging the corn plants.**

1. What technology is helping this farmer to do his job?

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

- **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.**

1. What technology is helping these workers to do their job?

2. How is this similar to and different from how corn is harvested today?

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

- **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.**

1. How many people does it take to operate this equipment? How does that impact a farmer financially? (Hint: Compare to "Field Workers Harvesting Sweet Corn")

2. How did the inventions that John Deere made impact the farmer in this photograph?

Be an Image Detective!

This is an example "Be an Image Detective" worksheet to help guide students in their analysis of images that are primary sources. This version of the worksheet is for you, the educator, to utilize. A printable version of this worksheet is available in this topic's Student Materials PDF.

<table>
<tr><td colspan="2">Title:
Who made the image?
What year?</td><td>What kind of image is it?
___ photo ___ drawing/cartoon
___ painting ___ advertisement
___ something else</td></tr>
<tr><td>Start with the Basics
In one sentence, what is happening in this image?

Is the image ...
____ black & white ____ color

What does this tell us about when the image was made?

Is there a caption?
____ yes ____ no

If so, what does the caption tell you?</td><td>Observe ... Look for the Details

Describe what you see in the image.

What are the people doing in the image?

What are the objects used for in the image?</td><td>Put the Pieces Together
Where do you think this image takes place? What is its location?

What evidence tells you that?

What time period?

What evidence tells you that?

Why do you think this image was made?

How does this image compare to modern times?</td></tr>
<tr><td colspan="3">What questions does this image lead you to ask?</td></tr>
</table>

Farm Size and Corn Yield Over Time

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Overview

Students will analyze a map and a graph to understand how the size of an average farm and the number of farms in Iowa have changed in the last 80 years.

Source Background

Farmers are growing more crops and managing more acres, but fewer people are making a living as farmers. In the last 80 years, the number of farms in Iowa has dramatically decreased as the population moves to more urban areas or live on acreages but do not have their primary occupation as farming. The average size of each farm also has dramatically increased, but the number of people farming has significantly decreased. Just like the size and number of farms is changing, so is the productivity of each acre of land.

Source 1: 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.

Source 2: This graph looks at the number of farms compared to the average farm size in Iowa from 1950 to 2014.

Source 3: 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.

Source 4: This USDA map shows the average bushels of corn produced per acre 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 in 2018.

Instructions

1. Display the primary source, **"Average Farm Size in Iowa Map."** Consider displaying the map on a screen or giving students access to the images. Give students an opportunity to "read" the map and determine meaning.

2. Discuss the map as a class.
   - Which district has the largest average farm size in Iowa? Explain how you know which district that is.
   - After analyzing the next source, compare them. 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?

Instructions continued on next page

Materials

- **"Average Farm Size in Iowa Map"**
- **"Corn Yield Map of Iowa"**
- **"Corn for Grain Yield Map of Iowa"**

Farm Size and Corn Yield Over Time

Instructions continued

3. Have students work independently or with a partner to answer the questions on **Analyze a Primary Source worksheet**. Discuss answers as a whole class.

4. Student will repeat steps one to three of this activity for the following primary sources to complete their analysis:
   - **Number of Farms and Average Farm Size in Iowa from 1950 to 2014**
   - **Corn Yield Map of Iowa, 1933**
   - **Corn for Grain Yield Map of Iowa, 2018**

More Materials

- **"Number of Farms and Average Farm Size in Iowa from 1950 to 2014"**
- **Analyze a Primary Source worksheet**

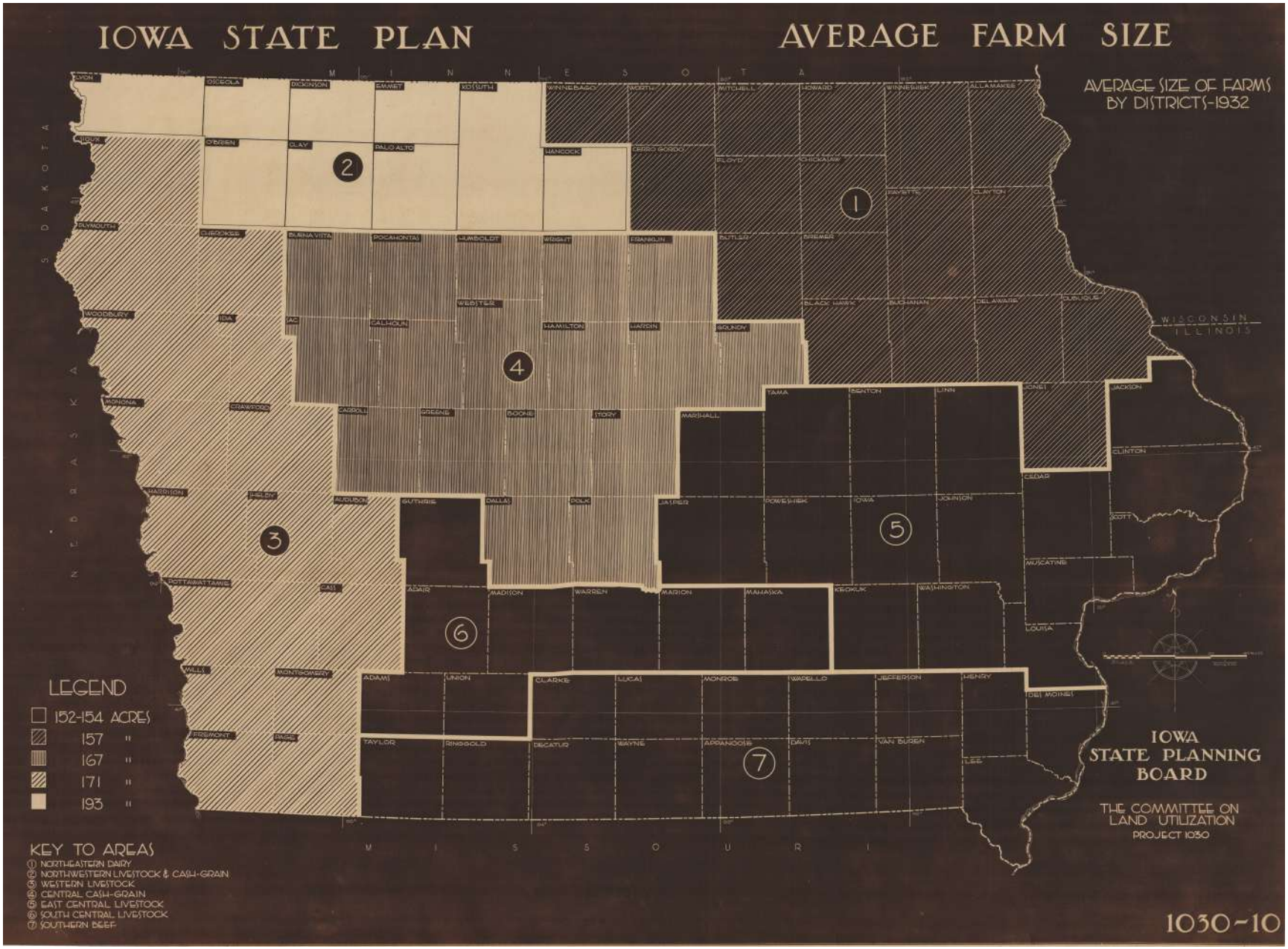
Goldie's History Kit Connection: To help students understand how corn seed type impacts yield, refer to the two **Pioneer Hi-Bred seed bags**. Discuss the questions that accompany the objects to learn more about the seeds.

To help students understand different types of farms that feed people, refer to ***The Farm That Feeds Us: A Year in the Life of an Organic Farm*** book.

To make connections about how Iowans have had a positive impact on farming outside of the United States, refer to the book ***The Kid Who Changed the World*** and the **Think Like... card for Norman Borlaug**. Both address Borlaug and the significant mark he made in feeding the world.

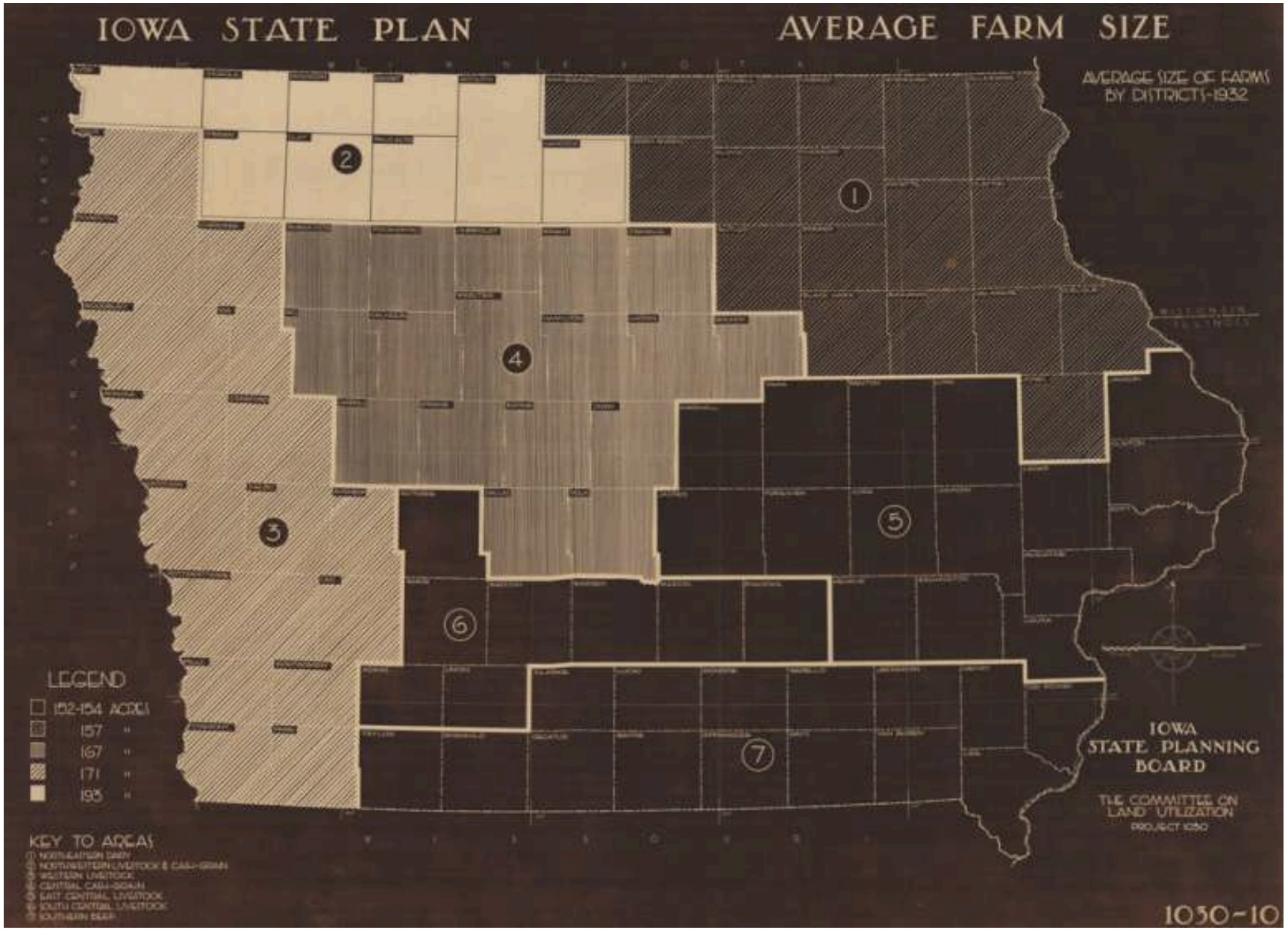
5. **Formative Assessment:** Observe as students work. Are students analyzing the sources accurately? Are they using the map legend as they discuss and answer questions? The **"Number of Farms and Average Farm Size" graph** is difficult to understand. Ask students to summarize the graph by asking the question, "What's the author's message in this graph?"

Average Farm Size in Iowa Map, 1933



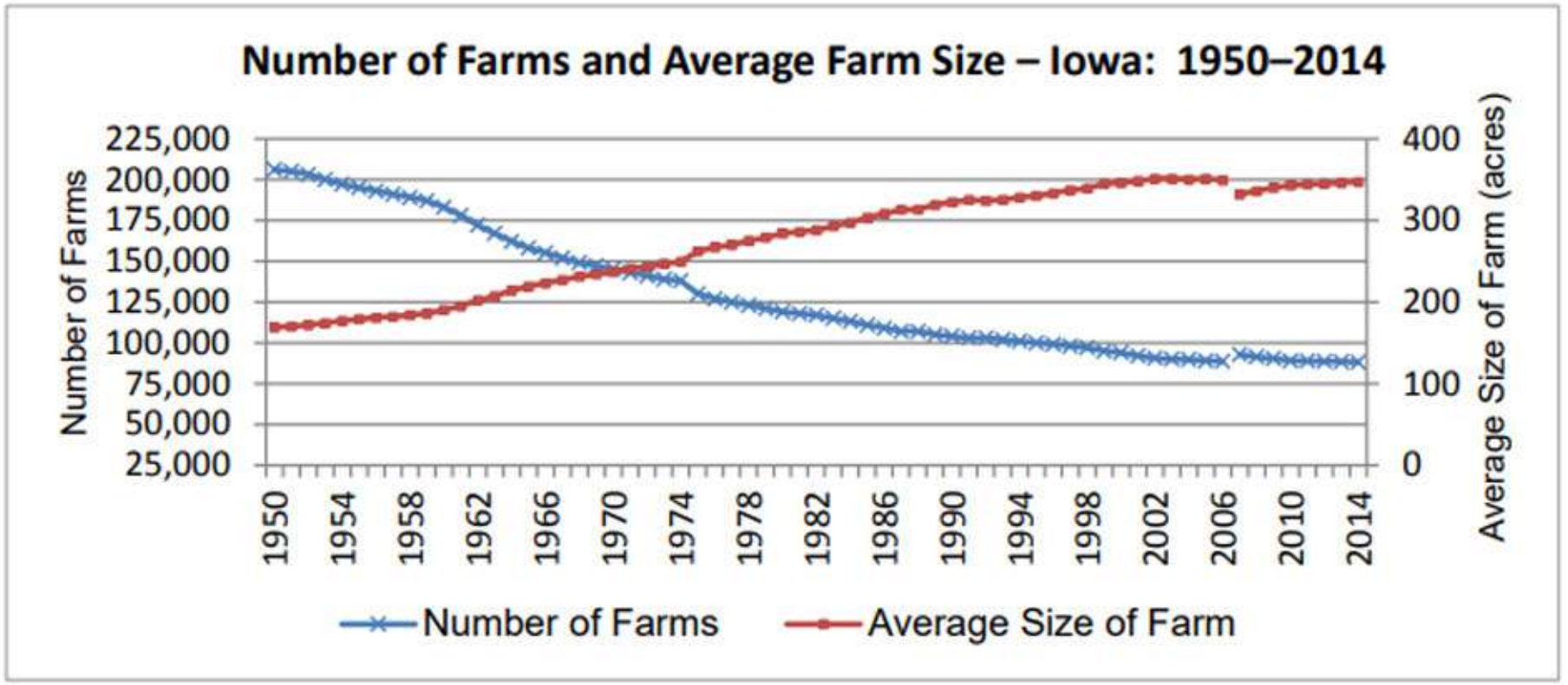
Courtesy of University of Iowa Library and Archives, "Average farm size: average size of farms by district, 1932," Iowa State Planning Board, 1933

Corn Yield Map of Iowa, 1933



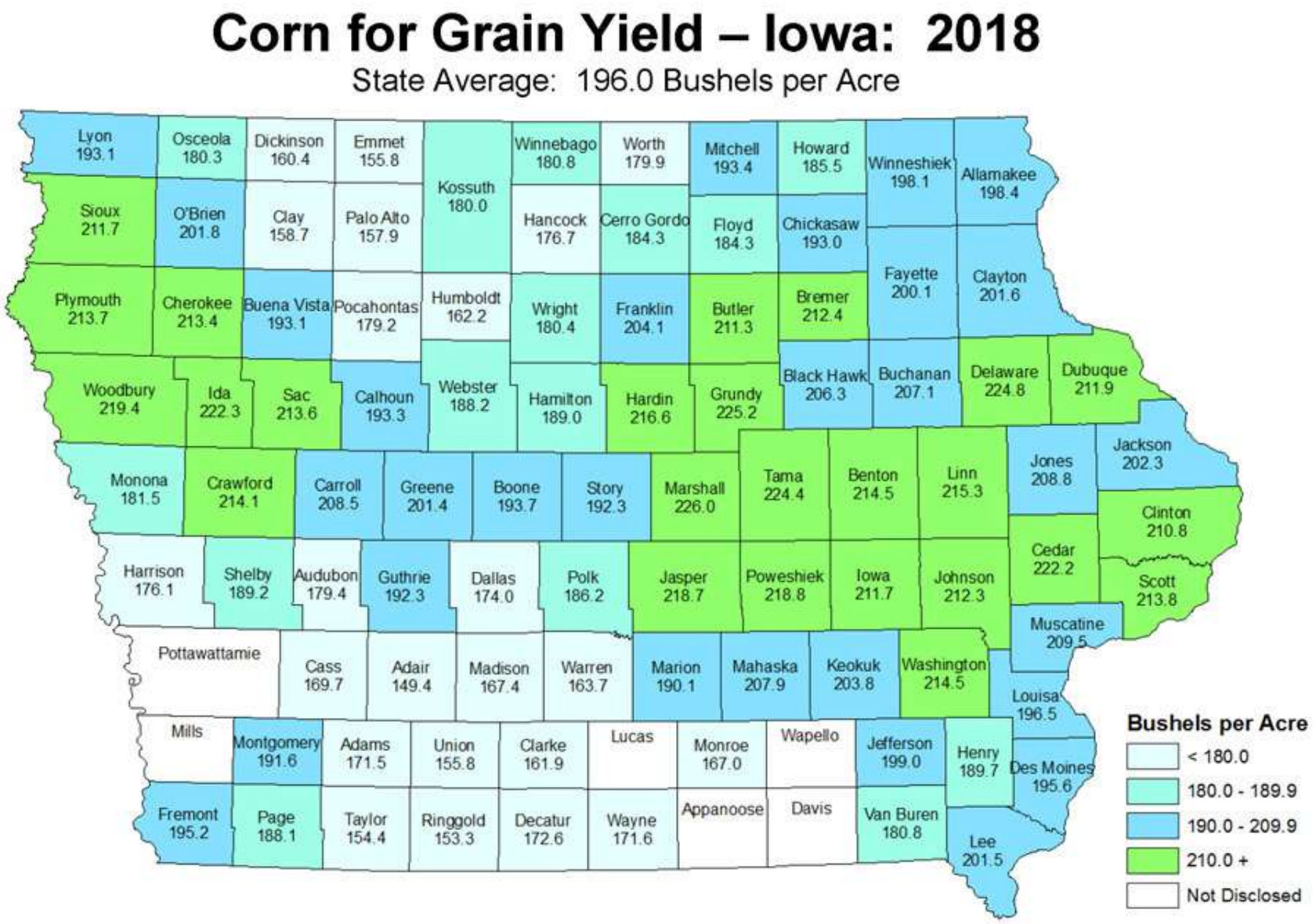
Courtesy of University of Iowa Library and Archives, "Yield of corn: average yield of corn in bushels per acre, by region 1928-1932: state average 37.57," Iowa State Planning Board, 1933

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

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

Analyze a Primary Source

This is an example worksheet that corresponds with the instructions in Part 3 to analyze primary sources. This version of the worksheet is for you, the educator, to fill out, add notes and utilize. A version of this worksheet is available for reproduction to students in this topic's Student Materials PDF.

Average Farm Size in Iowa Map, 1933

In 1933, the State Planning Board of Iowa, a special committee that only existed from 1934-1939 to study long-term land use plans for the state, published this map showing the average farm size measured in number of acres.

1. Which district has the largest average farm size In Iowa? District Number _____

   Which district has the smallest average farm size In Iowa? District Number _____

2. What's the range of average farm size in Iowa in 1932? _____ to _____ acres per farm
   (Hint: ranges are written with the smallest number first and the largest number second)

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

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

1. When the same measurement is taken over a period of time and graphed, a trend line forms. Which direction is the trend line going for the number of farms in Iowa from 1950 to 2014?

2. Which direction is the trend line going for the average size of a farm in Iowa from 1950 to 2014?

3. Write one sentence summarizing "Average Farm Size in Iowa Map" and "Number of Farms and Average Farm Size in Iowa." Include the words: number of farms, average size of farms.

   _____

   _____

   _____

Analyze a Primary Source

Corn Yield Map of Iowa, 1933

Each year the United States Department of Agriculture 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. For this publication, they show the average yield for a group of counties, called a region.

1. Which district has the largest average yield in Iowa? District Number _____

   Which district has the smallest average yield in Iowa? District Number _____

2. What was the statewide average corn yield from 1928-1932?

Corn for Grain Yield Map of Iowa, 2018

Published by the United States Department of Agriculture, this map shows the average bushels of corn produced per acre by county. Keep in mind that many variables impact the corn crop yield such as weather and soil conditions.

1. What was the statewide average corn yield from 2018?

2. How does this statewide average corn yield compare with the statewide average yield in 1928-1932?

Challenge Question: 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.

Write one sentence summarizing the "Corn Yield Map of Iowa" and the "Corn for Grain Yield Map of Iowa." Include the words: yield, increase/decrease.

_____

_____

_____

My Family's Corn Farm, Feb. 13, 2017

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Overview

Students will read the e-Book ***My Family's Corn Farm*** by Kate Olthoff to gain understanding into life on a present-day family farm in Iowa. They also will use a worksheet to analyze the text.

Source Background

This text, available **digitally** or ordered at very minimal cost from the Iowa Agriculture Literacy Foundation, chronicles Presley and her farm family in southern Iowa as they go through a season of growing corn.

Instructions

1. Students will independently read through the text the first time.
2. Now, display the text, reading the student portion of the text (the larger font on the white background) as well as the adult text (the smaller font on the blue background).
3. Have students answer the questions on the **Analyze a Source worksheet**. Discuss their answers as a whole class.

> **Goldie's History Kit Connection:** Refer to the **Think Like… card for Ruth Buxton Sayre**. Discuss the bio and questions that accompany the card to have the students think about family farming in a different way.

4. **Optional Resource:** Use **"The Commodity Chain of Corn" story map** (2017). This resource is an excellent visual representation of information on global corn production, sweet corn production, subsidies, ethanol, livestock feed, corn in food and U.S. corn exports.

> **Goldie's History Kit Connection:** To help students make connections between corn and corn byproducts, refer to the **Ethanol Poster**. Discuss the questions that accompany the objects to learn more about the connection.

5. **Formative Assessment:** Observe as students answer the questions in the worksheet to assess their understanding.

Materials

- ***My Family's Corn Farm*** by Kate Olthoff (e-Book)
- **Analyze a Source worksheet**
- **Optional Resource: "The Commodity Chain of Corn" story map**

Analyze a Source

This is an example worksheet that corresponds with the instructions in Part 4 to analyze a source. This version of the worksheet is for you, the educator, to fill out, add notes and utilize. A version of this worksheet is available for reproduction to students in this topic's Student Materials PDF.

***My Family's Corn Farm* by Kate Olthoff**
Iowa Agriculture Literacy Foundation, 2017

1. What is grown or raised on Presley's family's farm?

2. How is corn grown by Presley's family used?

3. How is Presley's family involved in the farm?

4. In Presley's grandparents and great-grandparents time, what was used to plant and harvest corn?

5. What does Presley's family use to plant and harvest corn? How are they helpful?

6. Complete the following sentences using these words:
ears, water, harvest, nutrients, roots, spring, combine, plant, grow, dried

In the _____, farmers _____ seeds in rows. The small corn plants sprout, and the _____ grow down into the soil to gather _____ and _____. In the summer, the corn plants _____ taller and taller, and then they grow the _____ of corn. When the corn plant is fully grown and the kernels are _____ out, it's time to _____ the corn. The farmer uses a _____ to remove the ears from the stocks and take off the kernels.

17. How many uses for corn exist today? List a few of them.

Gathering and Evaluating Evidence

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Overview

Students will evaluate the evidence they have collected as they analyzed sources and answered the questions that went with them. They will finalize the category labels, organize evidence and discuss what they found. Think of this step as the open forum where students discuss and test out their ideas before they write their essay

Instructions

Materials

- "Gathering Evidence" worksheet

1. Take students back to the "Asking Questions" section from Part 1. Review the categories the class brainstormed. After analyzing these primary sources, do any of those categories make sense to talk about when answering the question: How has farming in Iowa seen continuity and change?
2. Distribute the "Gathering Evidence" worksheet to students to complete. Complete the first category together. Write "growing cycle" in the first category box.
3. Have students talk with a partner about what they think has changed about the growing cycle and what has stayed the same. They should conclude that the growing cycle hasn't changed over time. If not, help them to reach that conclusion. In the "Continuity" box in the worksheet, write "cultivate > plant > weed > harvest," "depends on weather" and "hard work." Nothing is written in the "Change" section since these things have remained consistent.
4. Students will choose the categories they want to talk about in their essay. Students can independently select and record evidence from the answers to the questions along with their own background knowledge and/or source analysis beyond the questions listed in this lesson. As needed, provide the hint that the answers to questions to their past "Analyze a Primary Source" worksheets contain key ideas.
5. Students will then present, defend, clarify and discuss evidence. Students will decide if they think farming has shown more continuity or more change since the 1930s. Divide them into three groups: more continuity, more change and undecided. Students will physically move to separate areas of the classroom.
6. Within their group, give students time to discuss why they picked that thesis. The undecided group should focus on what they want to clarify or what questions they have.
7. Start the conversation by asking one group to tell the evidence they used to support their answer. Then move on to other groups to tell theirs.

Instructions continued on next page

Gathering and Evaluating Evidence

Instructions continued

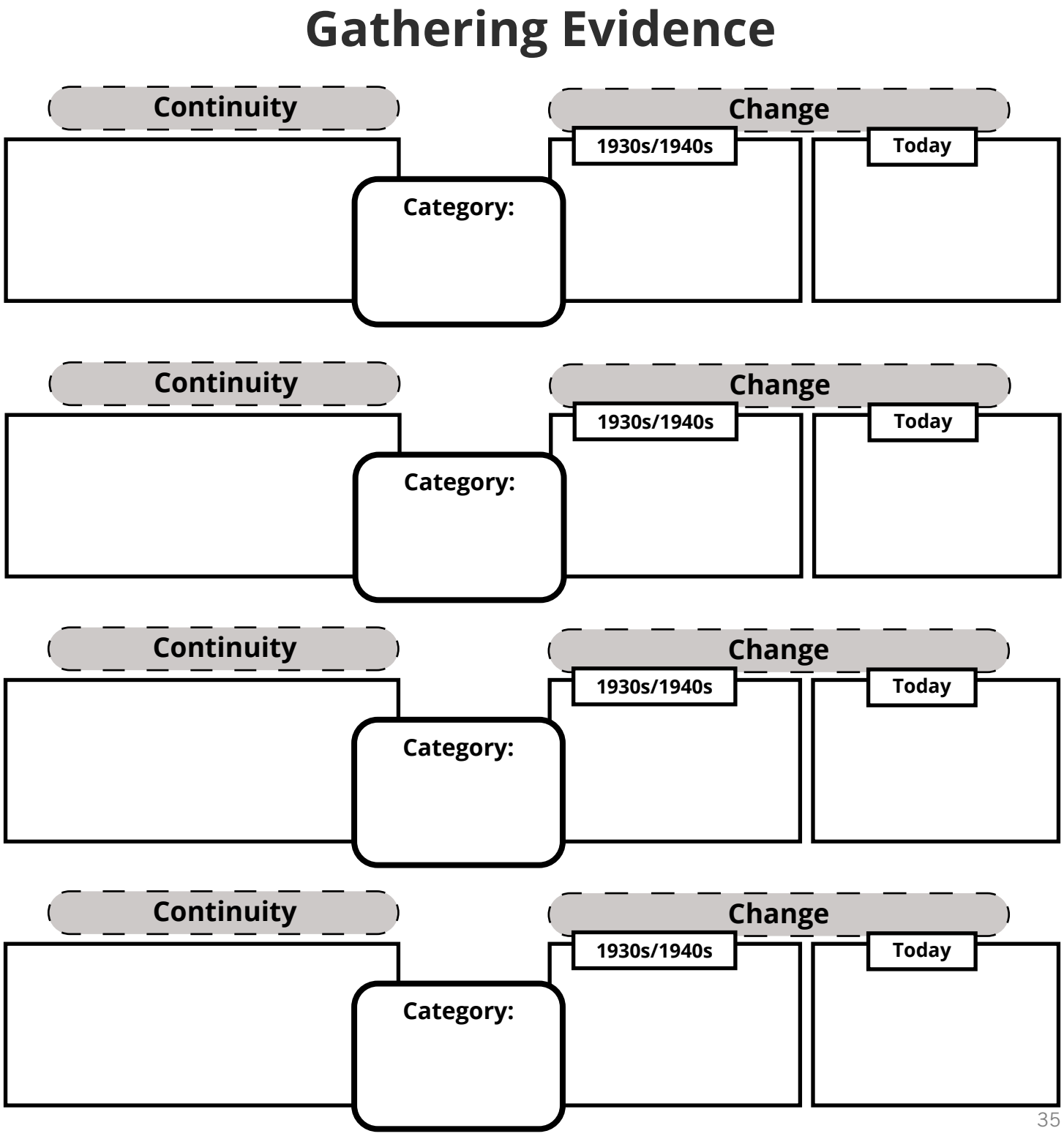
8. Ask the undecided group if anyone wants to move to a group based on what they heard (have them tell why they are moving before/as they physically relocate to the other group).

9. Open up the discussion for questions, clarification, and negotiation of thinking. Don't skip this step! It gives students a chance to test out their ideas before they write about them in the essay, even for those students who remain quiet the majority of the time. Their internal negotiation is key to solidifying understanding

10. **Formative Assessment:** Observe as students negotiate, clarifying as needed.

Gathering Evidence

This is an example gathering evidence worksheet that corresponds with the instructions for Part 5. This blank version of the worksheet is for you, the educator, to fill out, add notes and utilize. A printable version of this worksheet is available for reproduction in this topic's Student Materials PDF.



Lesson Summative Assessment

Unit Compelling Question

How does Iowa corn impact Iowans and the world?

Unit Supporting Question

How has farming in Iowa seen continuity and change?

Assessment Instructions

1. It is now time for students to assemble their evidence into an essay. The good news is that they have already been putting it together throughout the lesson as they have answered the questions.

2. Distribute **lesson summative assessment worksheet**. Give students plenty of time to write. Students are welcome to go back to the sources and the answers to their questions as they write.

3. **Language Arts Connections**
   - Hook Sentences: designed to introduce the topic, get the reader's attention, and make them want to read more
   - Thesis: statement clearly taking a position on and answering the big question, the "answer"
   - Evidence: fact or information the author uses to support their thesis, the "fact"
   - Reasoning: how the evidence connects to the thesis, the "why"

4. For students who do not want to be confined by the lines in the worksheet, they can write on notebook paper or even type their essay. Have them keep the worksheet nearby in order to consider the prompts that are in each section.

5. If possible, have students put the essay away for a couple of days. Then take it back out for revision and editing before turning in the final essay.

Assessment Scoring Options

Proficient	Student shows understanding of the continuity and changes in farming, answers are accurate
Developing	Mixture of some accurate and some inaccurate parts
Beginning	Student unable to write any ideas in the given time and/or ideas are very inaccurate

Lesson Summative Assessment

This is an example gathering evidence worksheet that corresponds with the instructions for the lesson summative assessment. This blank version of the worksheet is for you, the educator, to fill out, add notes and utilize. A printable version of this worksheet is available for reproduction in this topic's Student Materials PDF.

Lesson Summative Assessment

Scenario: The Iowa State Fair board is sponsoring a new competition this year. They have invited fourth graders to write an essay about farming in Iowa. Twenty-five winners will record their essay and be part of an interactive display in the Agriculture Building next August. Answer the following question for your chance to win. Good luck!

How has farming in Iowa seen continuity and change?

Introduction • Start with a hook sentence. • Write the context in a sentence or two. • Write the big question in your own words in a statement. • Write your thesis (answer) in one sentence. • **Refer to your answer to question 2 in Part 1.**	
Category 1 _____ • Start with topic sentence (introduces category) • Supporting Evidence • Reasoning (how evidence connects to thesis)	

Lesson Summative Assessment

Category 2 _____ • Start with topic sentence (introduces category) • Supporting Evidence • Reasoning (how evidence connects to thesis)	

Category 3 *(if needed)* _____ • Start with topic sentence (introduces category) • Supporting Evidence • Reasoning (how evidence connects to thesis)	

Conclusion • Restate thesis in a new way • Give a clincher - a final, convincing thought to leave with the reader	

Iowa's Corn and Agriculture Industry

Acre

An acre is a common measurement for land. It is equal to 43,560 square feet, which is about the size of an average football field.

Bushel

A bushel is a common measurement for grain. A bushel typically weighs about 70 pounds.

Combine

A combine is a machine used to cut a mature plant, such as corn, and thresh the grain from the chaff, such as corn kernels from the husk.

Corn Belt

The Corn Belt is an area of the United States that includes all of Iowa and Illinois, along with some parts of Indiana, Minnesota, South Dakota, Nebraska, Kansas, Missouri and Ohio. It is called the Corn Belt because it is a region of the Midwest since the 1850s that has dominated corn production in the United States.

Cultivate

To cultivate is to prepare land for the raising of crops, such as tilling or plowing the ground.

Global Positioning System (GPS)

The Global Positioning System is a space-based satellite navigation system that provides location and time information anywhere on the Earth.

Topsoil

Topsoil is a thin layer of surface soil where most plants grow. This is the layer of soil that a farmer turns over while plowing.

Tractor

A tractor is a machine with a very powerful engine used to slowly pull things along, usually farm equipment.

Yield

Yield is the full amount of an agricultural or industrial product that was produced.

Additional Resources for Educators

Iowa's Corn and Agriculture Industry Primary Source Set
This Read Iowa History unit is based on this digital collection of primary and secondary sources. The source set focuses on the continuity and change of farming in Iowa and the impact of the state's agriculture industry, especially corn, on the national and global economy.

John Deere, That's Who! by Tracy Nelson Maurer
This illustrated story book reflects on the life and legacy of John Deere, who was a pioneer of modern-day farming equipment.

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

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.

"The Commodity Chain of Corn" Story Map
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.

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

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.

READ ALOUD

EDUCATOR MATERIALS

Iowa's Corn and Agriculture Industry

4TH GRADE

Goldie's HISTORY KITS

STATE HISTORICAL SOCIETY OF IOWA
IOWA DEPARTMENT OF CULTURAL AFFAIRS

Iowa's Corn and Agriculture Industry

Introduction

A **"read aloud"** is an effective way to promote language and literacy skills and help encourage a lifelong love of reading and learning. This Goldie's History Kit provides four books related to Iowa's corn and agriculture industry. This read aloud activity directly combines literacy and Iowa history in an easily reproduceable format.

What's Included

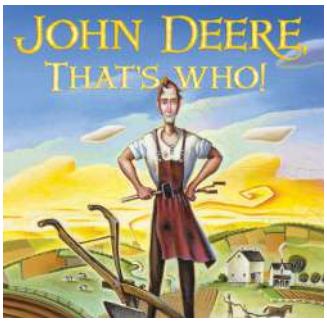
Each Read Aloud Activity Features

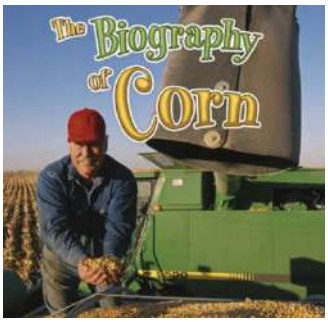
- Hard copy of the book (if available, digital recording included)
- Description of the book
- Reasoning for its inclusion in the kit and connection to Iowa history
- Text-dependent questions

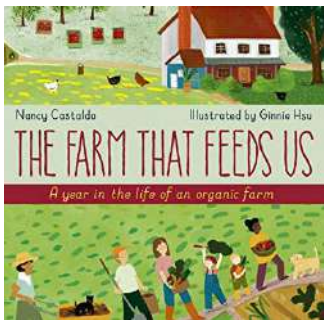
Books

This kit contains the four storybooks listed below. Each book has an activity instruction sheet that provides: a book description, a comprehensive explanation of how this book relates to the theme, why it was selected and how it aligns with the Iowa Core Literacy and Social Studies Standards.

- *John Deere, That's Who!* by Tracy Nelson Maurer
- *The Biography of Corn* by L. Michelle Nielsen
- *The Kid who Changed the World* by Andy Andrews
- *The Farm That Feeds Us: A Year in the Life of an Organic Farm* by Nancy Castaldo







Text-Dependent Questions

Each book activity instruction sheet also includes three to five text-dependent questions that align with the Iowa Core Literacy and Social Studies Standards. These questions can be integrated throughout the read aloud activity or after the book is completed to offer a point of reflection for students. Some of the questions are more oriented to facilitate a connection between the Goldie's History Kit theme, Iowa history and/or U.S. history.

Iowa's Corn and Agriculture Industry

4th Grade

Read Aloud Table of Contents

Suggested Read Aloud Tips

Below are listed suggestions of how to prepare for a read aloud activity with the additional historical resources available in this Goldie's History Kit. Educators are welcome to adjust the format to best fit their classroom needs.

Before Read Aloud

- Start by choosing one of the suggested storybooks to read aloud. To assist in your selection, each book is accompanied with a description, reasons for its selection with historical context and relationship to the topic and selected state standards.
- It is recommended that you read the books ahead of time. This allows you to get familiar with the book's content and difficult pronunciations and helps provide context for possible background information to prep students before you begin.
- Read and/or print off text-dependent questions prior to beginning the read aloud. It is up to the educator on whether to use the questions during read aloud or after, but this step allows you to become familiar with the questions and to denote pages within the storybook to use for a particular text-dependent question.
- It is encouraged to introduce the overall topic with a brief explanation. You can use the **background essay** and the individual book description to assist in prefacing the book.
- Expressive reading can be effective in keeping students' attention and emphasizing points of the book for retention. Consider using an expressive voice by changing the volume and tone of your reading to reflect different characters or significant events.

During Read Aloud

- Draw attention by pointing to characters or objects in the pictures as you read. It is important to bring attention to topics, events and specific characters you want to connect to the **Read Iowa History lesson plan** and the topic.
- Creating a dialogue with students during read aloud enhances engagement. Text-dependent questions are provided for each book, but educators are encouraged to include their own. Common questions asked to facilitate engagement during read aloud are: "What do you think will happen next?" or "Why would (X) do this? What would you have done if you were (X)?"
- Don't be afraid to follow participants' lead. If students have questions or want to go back, if time allows, try to be receptive to their observations. It may lead to important exchanges about the story that may not be discussed in follow-up questions.

Iowa's Corn and Agriculture Industry

4th Grade

After Read Aloud

- After you have finished reading the book aloud to the class, additional text-dependent questions are an effective way to gauge how much students remember from the book and if they can demonstrate an understanding of the text. Text-dependent questions were designed to reflect the Iowa Core Literacy and Social Studies Standards.
- If students are struggling to answer the text-dependent questions, feel free to go back to the book and re-read passages that could assist in their recollection and application.
- It is critically important that students are able to make connections between the story they heard and how it relates to history in Iowa and around the country.
  - **Example:** *The Kid Who Changed the World* has multiple direct connections to Iowa history. The book serves as a biography based upon the life of three people with Iowa ties whose lives were interconnected. Iowan Norman Borlaug developed genetically modified seeds that would save the lives of 2 billion people from starvation. He worked for Vice President Henry A. Wallace, also from Iowa, who encouraged him to create the special seeds. In turn, Wallace was impacted by the inventor George Washington Carver through their nature walks and Carver's teaching. Carver actually attended school at Simpson College and was Iowa State University's first African-American student, graduate and faculty member.
- Educators are welcome and encouraged to use the primary sources (such as the ones found in the Read Iowa History section or online within the Primary Source Sets) or find their own to present to the class. Pass around, hold up or project the images for students to view.
- Ultimately, the purpose of the read aloud wrap-up is to facilitate and evaluate students' comprehension of the subject matter and provide a direct link to history and literacy.

Read Aloud Standards

Below are the Iowa Core Literacy and Social Studies Standards that specifically align with the read-aloud activities in the Goldie's History Kit about Iowa's corn and agriculture industry. If a book title is listed after the description, this signifies that this standard only applies to this book.

Iowa Core Literacy Standards	
No.	**Description**
RL.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RL.4.2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.
RL.4.3	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts,
RI.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI.4.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on

Iowa Core Social Studies Standards	
No.	**Description**
SS.4.10.	Describe how societies have changed in the past and continue to change. (21st century skills)
SS.4.11.	Describe how scarcity requires a person to make a choice and identify costs associated with that choice.
SS.4.12.	Using historical and/or local examples, explain how competition has influenced the production of goods and services.
SS.4.18.	Describe how environmental and cultural characteristics influence population distribution in specific places or regions.
SS.4.23.	Explain probable causes and effects of events and developments.
SS.4.25.	Analyze the impact of technological changes in Iowa, across time and place.
SS.4.26.	Explain how Iowa's agriculture has changed over time.

John Deere, That's Who!

Tracy Nelson Maurer
Author

2017
Year of Publication

Historical Biography (Storybook)
Book Genre/Type

Book Description

Today, many Iowans associate John Deere with the tractor supply company that employs thousands of Iowans. However, the man John Deere was a blacksmith from Vermont living in the 1830s. Because of a series of unfortunate events, Deere headed to the Midwest in search of new beginnings. He settled in Illinois, America's breadbasket, and set to work forging farm tools. Eventually, Deere engineered a new steel blade for plows. Deere's invention revolutionized the farming industry. From that point forward, the company under his name served to industrialize the farming industry. The book concludes with a glossary and additional facts about John Deere and his company. (40 pages)

- **Listen to the digital recording of the book**

Why This Book

The story of John Deere has a direct tie to Iowa through the purchase and manufacturing of the Waterloo Boy tractor. This picture book biography introduces readers to the origins of John Deere's impact on farming in Iowa. The power of ingenuity and innovation are explored through Deere's life. The economic principles of product development, testing and distribution are modeled through Deere's manufacturing of the steel blade. Additionally, the importance of creativity and critical thinking in problem-solving situations are depicted.

Text-Dependent Questions

1. In the 1800s, pioneers were people that traveled to the American West in order to explore and settle land newly-acquired by the United States. Why did John Deere move West? What did he hope to accomplish?
2. After noticing that the farmers had a difficult time plowing their fields, how did John Deere use his abilities as a blacksmith to help them?
3. What impact did Deere's steel blade have on the farmers' ability to plow?
4. Although the man John Deere did not invent the tractor, his company would eventually sell them. How do we still see the impact of John Deere in Iowa today?

The Biography of Corn

L. Michelle Nielsen
Author

2007
Year of Publication

Biography
Book Genre/Type

Book Description

This informational book on corn is organized like a textbook. Each section is arranged topically in which the main text is surrounded by images and side vignettes. Readers are introduced to the origins, the varieties and the global impact of corn. Each section is brief and distills the essential facts into two pages. The book concludes with a glossary of key terms. (32 pages)

Why This Book

In the first half of the book, readers are presented with a historical overview of the origins of corn and how it expanded across the world. As a major contributor to the corn industry, Iowa's role in the history of corn is featured. Through this historical approach, readers are introduced to the ways that farming has changed over time. The impact of industrialization on farming is explored through an explanation of harvesting and processing machinery. The market for corn is discussed through the variety of products produced from corn and the impact of such products on the supply and demand chain. The science of corn is surveyed through the pollination and growth process alongside the invention of hybrid plants and GMOs. Finally, the impact of the environment on corn and vice versa is detailed in the remaining section of the book.

Text-Dependent Questions

1. *What is Corn:* Today, Iowans grow over two billion bushels of corn each year. However, corn is not original to Iowa. Where was corn originally grown? How did corn spread to Iowa?
2. *Corn Lands:* Iowa is a part of the Corn Belt in the U.S., where 80 percent of American corn is produced. What is it about the farming conditions in Iowa that make it such a great place to grow corn?
3. *The Corn Plant:* Look at the photo at the bottom of pg. 8 and notice the different varieties of corn. Why do you think corn comes in so many different colors and shapes?
4. *Growing and Harvesting:* Corn planters are pulled by tractors that can plant eight to 16 rows of corn at a time. How have machines like corn planters and combines helped to expand the corn industry?
5. *The Corn Business:* Since corn is a commodity – a good that is bought and sold – its price goes up and down based on the amount of supply and the demand for the good. What are some of the factors that impact the price of corn?
6. *New and Improved:* Scientists have discovered how to genetically modify corn so that it can resist disease, insects and drought. However, some people do not like the idea of GMOs. They claim that the long-term health effects of modifying plants are not known. What are some of the benefits to the environment that scientists point to in support of GMOs?
7. *Corn Made:* Corn is commonly eaten right off of the cob or used to make popcorn, but what are some of the more unusual foods and products that corn is used to produce?

The Kid Who Changed the World

Andy Andrews
Author

2014
Year of Publication

Historical Biography (Storybook)
Book Genre/Type

Book Description

This picture book biography is based upon the life of three people with Iowa connections whose lives were interconnected. Norman Borlaug developed genetically-modified seeds that would save the lives of two billion people from starvation. He worked for Vice President Henry A. Wallace, who encouraged Borlaug to create the special seeds. In turn, Wallace was impacted by the inventor George Washington Carver through their nature walks and Carver's teaching. Finally, the book also looks at how Carver's life was influenced by those around him, from being born into enslavement to becoming a world-reknown agricultural scientist and inventor. (40 pages)

- **Listen to the digital recording of the book *(read by author)***

Why This Book

The aim of this book is to help children understand that everything they do can make a difference in someone else's life. In the context of this book, actions matter, and this principle is shown through the continued impact these three men had on the future of agriculture. The importance of scientific experimentation and innovation is underscored through the lives of Borlaug and Carver. The impact of working together and building relationships is stressed by tracing the links between the main characters' lives.

Text-Dependent Questions

1. Each of the kids described in the story were impacted by someone else in their lives coming alongside them and encouraging them. Who is someone in your life that has impacted you?
2. George Washington Carver was the first African-American student to attend Iowa State University. What kind of inventions did Carver create by applying the knowledge he had gained from college?
3. Henry A. Wallace served as Secretary of Agriculture and Vice President under President Franklin D. Roosevelt. By hiring Norman Borlaug, how did Wallace play a role in changing the world?
4. Norman Borlaug created plant seeds that could resist disease and drought. Why was this a revolutionary invention?
5. Who is someone in your life that you can make an impact on by caring for them?

The Farm That Feeds Us: A Year in the Life of an Organic Farm

Nancy Castaldo
Author

2020
Year of Publication

Informational
Book Genre/Type

Book Description

This book invites readers to follow along and discover what a year in the life of an organic farmer looks like. The book is organized into four sections in keeping with the seasons. This structure demonstrates the transformative nature of the farm as various crops are grown at different points in the year. Additional topics that are covered include animal breeds, pest control, pollination, photosynthesis, sustainability and food distribution. The book concludes with tips for supporting farmers and a glossary of key sustainable farming terms. (80 pages)

- **Listen to the digital recording of the book *(read by author)***

Why This Book

This book depicts a variety of farming models. Each section provides side-by-side comparisons accompanied by illustrations to inform the reader about the numerous methods for farming and the variety of produce and products grown on farms. By comparing different farming methods, readers are presented with the ways in which farming has changed over time. Selling produce and products at the local farmers market presents readers with examples of the supply chain and the ways in which people can support local markets. This comprehensive book presents readers with the necessary information to understand the multifaceted nature of farming.

Text-Dependent Questions

1. *Farm and Feeding:* Discuss the different types of farms in this section. Why have farms changed over the years?
2. *Types of Farms:* Some farms are small with enough animals and crops to feed their family, while other farms are large and only grow one variety of crop. Why is it important to have a variety of farm types?
3. *Tilling the Fields:* When planting seeds and tilling the field, farmers can either do this by hand or use machinery like a tractor. How do tractors increase the amount of productivity on the farm?
4. *Farm Machinery:* Look at the different machines that help farmers, from the hand-held tools to the big drivable tools. Why would different types of farms need different tools?
5. *Corn Planting and Harvesting:* The majority of corn grown in Iowa is called “field corn.” What are other varieties of corn that are grown? Why is it important to grow different types of corn?
6. *Pollinating the Farm:* Work on a farm does not solely depend on the farmers. How do insects like butterflies, hummingbirds and bees contribute to the farming process?
7. *Putting the Fields to Sleep:* How do the changing seasons impact work on the farm and what can be grown?
8. *Caring for Equipment:* Why would farmers need to prepare their tools for the winter months?
9. *Doing Our Bit:* What are some different ways we can support farmers, large and small?

HISTORY MYSTERY

EDUCATOR MATERIALS

Iowa's Corn and Agriculture Industry

4TH GRADE

Goldie's HISTORY KITS

STATE HISTORICAL SOCIETY OF IOWA
IOWA DEPARTMENT OF CULTURAL AFFAIRS

Iowa's Corn and Agriculture Industry

Introduction

The **History Mystery** activity utilizes historic objects from the State Historical Museum of Iowa's collection to provide students with a unique opportunity to investigate photos of museum artifacts in their own classrooms. Students will work as "history detectives" to figure out the nature of the object, its use and its relationship to the kit theme. This activity is designed to challenge students to use their skills of deduction, critical thinking and visual literacy to identify the multiple artifacts and understand their connections to Iowa History and the theme of the kit. History Mystery can be used as an independent student activity or in conjunction with the **Read Iowa History lesson plan**. Educators should explain to students that the goal of the activity is to solve the mystery by searching photos (and possibly videos) for visual clues.

By participating in History Mystery, students will:

- Use problem-solving and critical thinking skills
- Analyze clues to deduce the name and use of objects
- Explore and use background information provided for each object to determine historical significance
- Make real-world connections between the use of the objects and the kit theme

What's Included

This History Mystery Activity Features

- Photographs of objects
- Videos of select objects
- Background information for each object
- Suggested questions to facilitate students for each object
- History Mystery worksheet

Objects

Each object has photos specifically taken for students to analyze. The photos are printed, laminated and included in the kit. Most objects include multiple photos at different angles, close-ups, etc. to provide different perspectives to help in their detective work. Some objects also include videos. All images and videos for History Mystery are available on the USB flash drive included in this kit and also in the **Google Drive folder**.

Questions

Each individual object page in the educator materials packet includes questions to help educators encourage, assist and further engage students as they attempt this activity. Questions are meant to provoke conversation about the object, its relation to the theme of the kit and its connection to Iowa history.

History Mystery Worksheet with Artifact Interpretation Instructions

The History Mystery worksheet includes artifact interpretation questions to assist students in analyzing the objects. The worksheet is easily reproduceable and meant to be distributed to students. It can also be applied to any activity similar to History Mystery, such as having students bring in their own family artifacts.

Iowa's Corn and Agriculture Industry

4th Grade

History Mystery Table of Contents

Suggested History Mystery Set Up and Implementation

Below are suggestions of how to prepare for and run a History Mystery activity. The first format shows how to integrate the activity with the **Read Iowa History lesson plan** (refer to Kit Connections). The second suggested format is using History Mystery as a standalone, group activity. Educators are welcome to adjust the format to best fit their classroom needs.

Type of Activity	Before Activity	During Activity
Kit Connections Using the objects identified with Kit Connections	• Choose which Kit Connection with a History Mystery object you would like to use. Kit Connections are identifiable by the yellow box and Goldie's icon within the **Read Iowa History lesson plan**. • Have the object pages from this manual available to you with the object descriptions, historical significance and additional questions. • Choose the most effective, convenient way to display the object photos (and possibly videos) to the class. • If they have not already read it or had it read to them, please read aloud the **background essay**.	• After displaying the photos or video of the object, it is recommended that students receive one to two minutes to silently analyze the object. • After the initial analysis, start a discussion with the students (one to three minutes) to reveal their initial thoughts and analysis of the object. • Following this time, pose the questions connected to the object to your students. • Remember to connect the objects to the kit topic and the lesson currently in progress.

Iowa's Corn and Agriculture Industry

4th Grade

Type of Activity	Before Activity	During Activity
Group Work Standalone activity with students working together in small groups to investigate objects	• Have the object pages from this manual available to you with the object descriptions, historical significance and additional questions. • Separate your students into groups and assign each group a photo of an object from the kit. • Choose the most effective, convenient way to display the object photos (and possibly videos). • Instruct students to use the artifact interpretation worksheet to assist them as they attempt to determine the History Mystery object. • Worksheet Options: Either have the students work together with one worksheet or have each student independently fill in the worksheet and report out from the group. • If they have not already read it or had it read to them, please read aloud the **background essay**.	• It is recommended that students receive four to five minutes to analyze the object and fill in the artifact interpretation worksheet. • Ask student groups to present on their objects. As they speak, project the object on the classroom screen. • To encourage classroom discussion and to make connections to the topic, ask all or some of the questions that are associated with each object.

Hand Planter

Description

This is a hand-operated corn planter. The frame is painted red with a green seed container. The planter handles and frame are wood with a seed container and tip made of metal.

Object Significance

For centuries, farming involved carrying a container, usually a bag, of seeds in the field and using a stick to poke a hole into the ground before dropping the seeds into the hole. With this planter, farmers and gardeners were able to quickly and easily plant seeds all in one action. Even in the decades after large, complex machines took over farming planters like this one have remained essential to small-scale farming in Iowa.

A handheld planter such as this one was also very important to ensure that entire fields were well planted. In the mid-1800s and early 1900s, when farmers would do check row planting, crops sometimes did not grow in a few spots of a field. Once noticed, farmers would go out into the field and use a handheld planter to place a few more seeds in the empty spots.

Questions about History Mystery Object

1. What do you see when you look at this object? What else do you notice?
2. Describe the ways that this planter would benefit farmers, rather than using a sick to poke holes in the soil and carrying a bag of seed.
3. Do you think the planter's design helped make it appealing for many to buy? Why or why not?

Corn Planter *(Object Video Available)*

Description

This two-row, horse-drawn corn planter was manufactured by the Keystone Manufacturing Company out of Rock Falls, Illinois, sometime between 1860 and 1870. The planter is made up of a mixture of wood and metal parts. This planter was used to plant three to five seeds at a time, 46 inches apart, at points determined by the farmer. It was owned and used by A.O. Ommen in Jones and Guthrie counties, during the 1870s and 1880s.

Object Significance

During the 1900s, new tools and machines, like this corn planter, allowed fields and farms to become bigger. This planter was built to hold two people. The person in the back seat, which is missing, would drive the team of horses. The person in the front seat operated a lever to drop three to five seeds of corn at certain points, often 46 inches apart.

Questions about History Mystery Object

1. What do you see when you look at this object? What else do you notice?
2. How would a planter like this, as opposed to a **hand planter**, help farmers grow more crops on larger farms?
3. Why do you think they choose to use wooden wheels instead of metal ones?

Corn Knife

Description

This knife with a metal, wedge-shaped blade with a straight top. The blade is attached to a wooden handle and is held together by two rivets. The handle has a round end and a small hole with for a handle strap. The inside of the handle has a slight, inward curve to better grip in one's hand. This knife was used between 1875 and 1925 to cut down corn stalks.

Object Significance

Prior to the arrival of pioneers, American Indians grew corn but left the stalks up which helped with the growth of other crops. The stalks acted as poles for the vines of beans and provided shade for crops such as squash. Pioneers would farm the land of Iowa, though, by having it divided into fields with a single crop at a time. In addition to the method of planting, harvesting involved cutting down the stalks of the corn. Without any machines, farmers would use knives like this one to cut down the stalks and use them to feed their livestock.

Questions about History Mystery Object

1. What do you see when you look at this object?
2. Why do you think farmers would cut the stalks of corn with a corn knife rather than pull them completely out of the ground?
3. Today, corn is harvested using a combine machine, which pulls the stalk, with the ears of corn attached, out of the ground and separates the ears of corn from the stalk. The corn is collected and the stalk falls back to the ground. Do you think farmers still have a use for corn knives? Why or why not?

Harvester Model *(Object Video Available)*

Description

A corn harvester combine, today known as a combine, was invented and used by Patrick J. Lawler of Westside, Iowa, located in Crawford County. This is a model, or much smaller, non-working version, of the machine. The full-size machine was made out of iron and drawn by horses. This machine worked by cutting the corn stalks, removing the husk and dispensing the ear of corn via its elevator chute in the middle. Lawler and J. F. Barry, a lawyer friend from Chicago, Illinois, spent several years working on the design before getting a patent for their creation on April 15, 1890. This model of the picker is 11 by 12.25 inches.

Object Significance

While Iowa farmers used various machines since the mid-1800s, the invention of this harvester meant that farmers could harvest corn crops mechanically and eliminate the need for harvesting by hand. This harvester, invented by an Iowan, changed how farming was done as many parts of this machine, such as its header and rollers, would go on to inspire those farming machines made by John Deere today.

Questions about History Mystery Object

1. What do you see when you look at this object? What else do you notice?
2. This is a model, or much smaller version, of the harvester invented by Iowan Patrick J. Lawler. Brainstorm reasons why Lawler would create a model of a full-sized machine.
3. Discuss the ways this harvester would impact corn farming in the late 1800s and early 1900s since the harvesting process could be mechanized.

Corn Husking Peg

Description

This husking peg was owned by Julia Eva Freeman of Winfield, Iowa, located in Henry County. The peg is made of wood and is hand carved with a leather strap attached to it. It would be held in one's hand with the fingers going through the strap the peg. The peg would be used to remove the pieces covering an ear of corn on the stalk, called husk, as well as the ear itself. The peg is 5.5 by 1.5 by 1.25 inches.

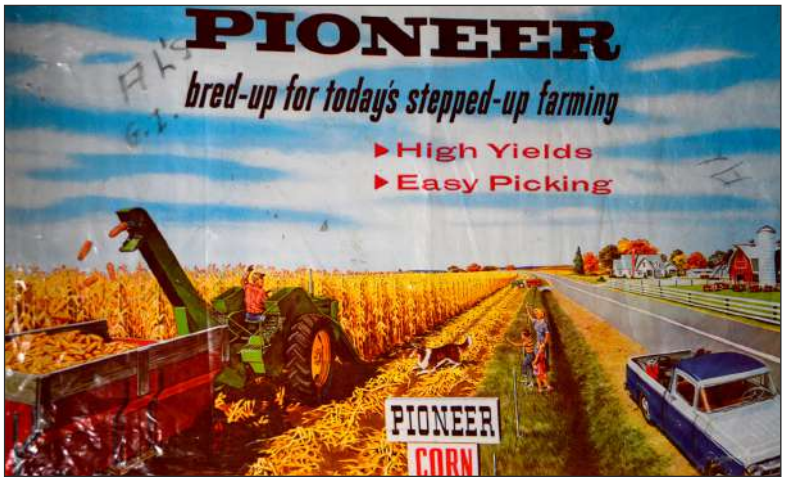
Object Significance

Prior to machine pickers and combines, harvesting corn and all crops was done by hand. This required a lot of time and physical work. A large amount of a farmer's time regularly revolved around working the fields. Before machines, simple tools were needed to make harvesting quicker and easier. With corn being a staple of Iowa farming, this peg was a very important tool in making sure Iowans could harvest as much corn as possible.

Questions about History Mystery Object

1. What do you see when you look at this object? What else do you notice?
2. Many farmers used husking pegs rather than machines through the 1900s. Why do you think some farmers switched to machines as soon they were invented?
3. Do you think today's large corn fields can be harvested by hand using this? Why or why not?

Pioneer Seed Bags



Description

These two bags are both from Pioneer Hi-Bred International but from different eras of time. The small white bag is from 1949 with Pioneer's logo stamped on the front. The bag is made of cloth and has a poem attached with "Garst and Thomas, Hybrid Corn Company, Coon Rapids, Iowa" labeled at the bottom. This bag was used to send samples of Pioneer's seed products to farmers. The bag is 3 by 9.5 inches.

The second, larger bag is from 1970. The bag is made of clear plastic and it has a colorful farm scene printed on the front. The scene displays a farmer harvesting corn waving to his wife and child standing nearby off the road with their truck. At the top of the scene it says "PIONEER, bred-up for today's stepped-up farming, High Yields, Easy Picking." This bag was used to commercially sell Pioneer's seeds to its customers. The bag is 22 by 14 inches.

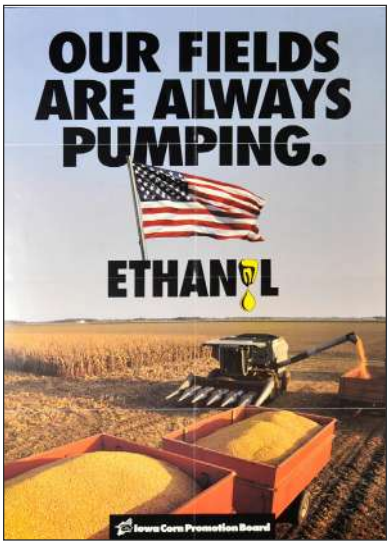
Object Significance

Long before pioneers, American Indians would selectively breed different types of corn together in order to get the most out of their crops. Come the early 1900s, rather than selective breeding, people started to experiment in creating hybrids between different types of corn. In 1926, Pioneer produced the first hybrid corn seeds sold. And the seeds given and sold in these bags allowed for corn to persist as a staple of Iowan farming.

Questions about History Mystery Object

1. What do you see when you look at this object? What else do you notice?
2. If these hybrid seeds were said to be better than standard corn, why do you think Pioneer needed to send out samples in 1949, over 20 years already on the market? What do you think changed between 1949 and 1970?
3. Corn has a variety of uses today. Why do you think different hybrid corn seeds are still being created and used?

Ethanol Poster



Description

This poster displays an image of a combine unloading harvested corn in a wagon. The scene also includes two wagons already full of corn and a view of the rest of the field still needing to be harvested. Across the top-middle section the black text says “Our Fields Are Always Pumping. Ethanol.” There is an U.S. flag blowing in the background. “Ethanol” is also presented with its “O” appearing as a kernel of corn covered in oil with a yellow drop implied to be ethanol. At the bottom of the poster is a black with white text saying “Iowa Corn Promotion Board” featured next to the board’s logo. The poster is 20 by 28 inches and was created and presented at the Iowa Pork Expo, now World Pork Expo, in 1991.

Object Significance

The poster is an example of presenting corn as a staple of Iowa farming. Although ethanol, a chemical compound derived from corn, has many different uses, this poster refers to its use in auto fuel. During the late 1970s, the United States faced a fuel crisis and greater attention was given to alternative sources, especially ethanol. This poster was created in 1991 by the Iowa Corn Promotion Board as a promotion at the Iowa Pork Expo.

Questions about History Mystery Object

1. What do you see when you look at this object? What else do you notice?
2. Why do you think the Iowa Corn Promotion Board advertised about ethanol at the Iowa Pork Expo?
3. Currently, some grades of auto fuel include ethanol. Discuss reasons why ethanol and other corn derivatives remain in use.

Analyze History Mystery Objects

This is an example worksheet that corresponds with the instructions to analyze the objects from History Mystery. This version of the worksheet is for you, the educator, to utilize. A printable version of this worksheet is available in this kit's Student Materials packet on the USB flash drive and **Google Drive folder**.

Analyze an Object

1	**1. What does it look like?** Think about size, shape and color.	**4. Do you see any signs of wear?** Does it mean anything about how the object was used?
	2. What is the object made from? Is it one or more materials combined?	**5. What year or time period do you think it is from?** Why do you think it was from that year?
	3. Is there any writing or details? If yes, what does it tell you about the object?	**6. Who is the owner?** Write a brief description of the owner.
2	**1. What does it look like?** Think about size, shape and color.	**4. Do you see any signs of wear?** Does it mean anything about how the object was used?
	2. What is the object made from? Is it one or more materials combined?	**5. What year or time period do you think it is from?** Why do you think it was from that year?
	3. Is there any writing or details? If yes, what does it tell you about the object?	**6. Who is the owner?** Write a brief description of the owner.

Continued on next page.

Analyze History Mystery Objects

3	**1. What does it look like?** Think about size, shape and color.	**4. Do you see any signs of wear?** Does it mean anything about how the object was used?
	2. What is the object made from? Is it one or more materials combined?	**5. What year or time period do you think it is from?** Why do you think it was from that year?
	3. Is there any writing or details? If yes, what does it tell you about the object?	**6. Who is the owner?** Write a brief description of the owner.
4	**1. What does it look like?** Think about size, shape and color.	**4. Do you see any signs of wear?** Does it mean anything about how the object was used?
	2. What is the object made from? Is it one or more materials combined?	**5. What year or time period do you think it is from?** Why do you think it was from that year?
	3. Is there any writing or details? If yes, what does it tell you about the object?	**6. Who is the owner?** Write a brief description of the owner.
5	**1. What does it look like?** Think about size, shape and color.	**4. Do you see any signs of wear?** Does it mean anything about how the object was used?
	2. What is the object made from? Is it one or more materials combined?	**5. What year or time period do you think it is from?** Why do you think it was from that year?
	3. Is there any writing or details? If yes, what does it tell you about the object?	**6. Who is the owner?** Write a brief description of the owner.

THINK LIKE ...

EDUCATOR MATERIALS

Iowa's Corn and Agriculture Industry

4TH GRADE

Goldie's HISTORY KITS

STATE HISTORICAL SOCIETY OF IOWA
IOWA DEPARTMENT OF CULTURAL AFFAIRS

THINK LIKE ...

Iowa's Corn and Agriculture Industry

Introduction

The "Think Like..." activity includes a set of cards to encourage students to think about history through multiple perspectives. The cards feature questions students can use to guide their process of understanding about Iowa's corn and agriculture industry from individuals with varying interests and priorities. Every kit includes five universal cards (geographer, economist, journalist, economist and political scientist) and two additional cards that specifically highlight individuals connected to the topic (Norman Borlaug and Ruth Buxton Sayre). Each card provides background information about a notable Iowan to provide an Iowa history connection to reference as they work on the questions.

Think Like... Activity Table of Contents

What's Included

Think Like... Cards Feature

- Pack of seven cards
- Each card Includes
  - Definition of card description (ex: the job of a geographer)
  - Questions to guide the connection between the card and the topic
  - Brief biography of a notable Iowan in that profession

Questions

The questions with the five universal cards (in every kit) are broad enough that they can relate to any topic, not just Iowa's corn and agriculture industry. Some cards are more applicable than others to this topic, but each question is open-ended and can push students to think about a topic from multiple perspectives. For instance, thinking about how Iowa's corn and agriculture industry has changed over time as an historian may be an easier application than thinking about it from the perspective of a geographer. The Iowan featured on the back of the card is a unique element of these cards that allows students to make local, real-life connections between Iowa history and the kit topic.

Iowa's Corn and Agriculture Industry

4th Grade

Suggested Think Like... Activity Set Up and Implementation

Below are suggestions of how to prepare for and run a Think Like... card activity. The first format shows how to integrate the activity with the **Read Iowa History lesson plan** (refer to Kit Connections). The second suggested format is using Think Like... cards as a standalone, group activity. Educators are welcome to adjust the format to best fit their classroom needs.

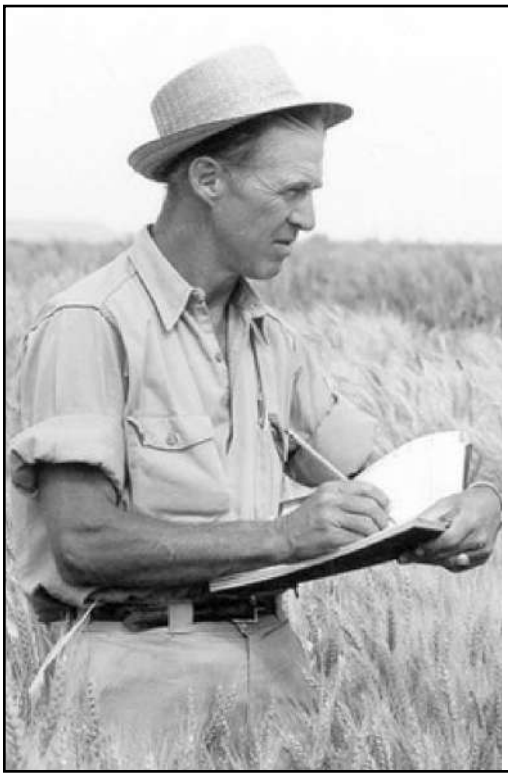
Type of Activity	Before Activity	During Activity
Kit Connections Using the Think Like... cards with Kit Connections	• Choose which Kit Connection with a Think Like... card you would like to use. • If connected to an object or primary source from the kit, have the source images available to you with the source descriptions, historical significance and additional questions (if applicable). • Choose the most effective, convenient way to display the Think Like... card questions and the primary source images (if applicable) to the class. • If they have not already read it or had it read to them, please read aloud the **background essay**.	• Provide students with a description of the profession they will think like, as well as the biography of the Iowan who had the same career, if appropriate. • Provide students with the Think Like... questions and display connected primary source image (if applicable). • Pose the Think Like... questions to your students to connect with the source, lesson or topic of the kit. • To encourage classroom discussion and to make connections to the topic, ask all or some of the questions, if provided, that are associated with each card or source to the entire class

Type of Activity	Before Activity	During Activity
Group Work Standalone activity with students working together in small groups to use Think Like... Cards	• Separate your students into groups. Assign each group a different Think Like... card from the kit. • Choose the most effective, convenient way to display the card's questions for the groups. The questions on the cards work best when paired with a museum object, a primary source from the kit or directly linked to the topic of the kit. • If they have not already read it or had it read to them, please read aloud the **background essay**.	• It is recommended that students receive four to five minutes to read and answer the questions on the Think Like... card. • Ask groups to present their answers to the questions. As they speak, project the Think Like... card on the screen. • Following their answers, open the discussion to the class for other ideas or answers regarding the questions. • Remember to connect the Think Like... questions to the kit topic and the lesson currently in progress.

Think Like... Norman Borlaug Card

Think Like Norman Borlaug

- How do you think Norman Borlaug's work with wheat varieties helped combat starvation in countries?
- Borlaug worked with younger scientists during his time in Mexico. Why do you think it was important for him to train younger scientists in different countries?
- Why do you think Borlaug's work received a Nobel Peace Prize?



Norman Borlaug (1881-1971)
Norman Borlaug was born on March 25, 1914 near Cresco, Iowa, and he would win the Nobel Peace Prize in 1970 for his work in agriculture. He studied plant pathology at the University of Minnesota, where he received his Bachelor of Science, master's degree and doctorate in 1942. Following college, he participated in the Rockefeller Foundation's program where he researched wheat improvement in Mexico, and helped train other scientists. Borlaug then developed wheat varieties that could be disease resistant and have high yield potential. His findings helped spark the "Green Revolution," and assisted with fighting hunger around the world.

Think Like... Ruth Buxton Sayre Card

Think Like Ruth Buxton Sayre

- Why do you think Ruth Buxton Sayre founded the Associated Country Women of the World? In what ways would this organization help women farmers in the early 1990s?
- Why would it be important to have someone like Sayre serve on national organizations focusing on agriculture?
- Why would it be important to help connect rural women in national affairs?

Ruth Buxton Sayre (1876-1962)
Ruth Buxton Sayre was born in Indianola, Iowa, in 1896 and was known as the "First Lady of the Farm." During her public work, she focused on improving life for farm women. Sayre became the state chairman of the American Farm Bureau Federation in 1930, and helped found the Associated Country Women of the World organization. Appointed by President Dwight D. Eisenhower to the National Agricultural Advisory Commission, she was the only woman and provided a voice for Iowa farmers. She also served on the advisory committee to the United States Secretary of Labor, served on the National Safety Council and the National Civilian Defense Committee, and she held two positions in the United Nations.

Think Like... a Geographer Card

Think Like a Geographer

A person who studies the environment and how it impacts people.

- Describe details about this location. What do you notice that can help figure out where this place is located? What is unique?
- Why would people move to or leave this place?
- How would people travel to this location? How has traveling to this location changed over time?
- Describe details about people who live here and how they impact the location? How does the location impact the people who live there?

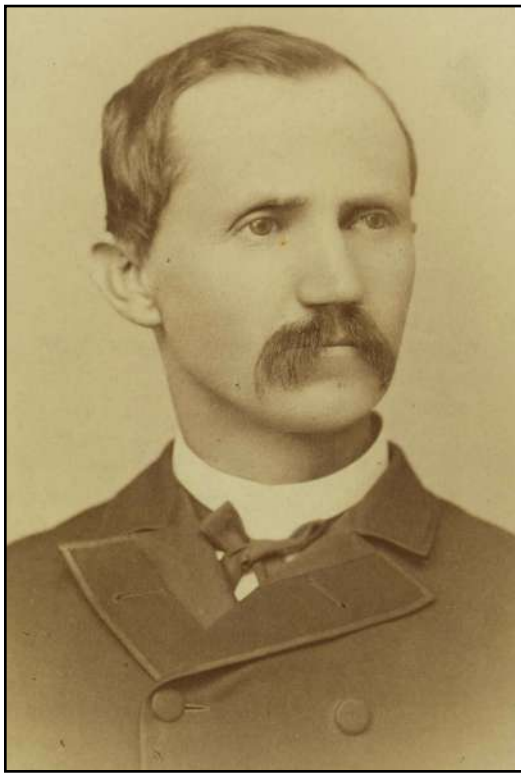
Ira Cook (1821-1902)
Much like how a geographer studies the land, a land surveyor is someone who measures land areas in order to determine boundaries for settlers to purchase. Ira Cook was one of many Iowans to receive a contract from the government to be a land surveyor when Iowa territory had to be measured. Cook endured tough conditions, long journeys by foot and wagon and harsh weather from 1849-1853 as he crossed the state measuring the land. He was elected mayor of Des Moines, Iowa, in 1861 and later moved to Washington, D.C., to become Deputy United States Revenue Collector in 1864.

Think Like... an Economist Card

Think Like an Economist

A person who studies the ways people make a living.

- Describe the people in relation to the location. What jobs or occupations do you think people had? Why do you say that? How do you think they met their needs and wants?
- How do decisions made by individuals affect themselves and the economy?
- How do decisions made by businesses affect people?
- How do jobs impact people and the economy? Describe what happens when jobs are lost.



Voltaire Twombly (1842-1918)
Voltaire P. Twombly was elected Treasurer of Iowa in January 1885. The treasurer officially oversees the state's revenue and finances. He served three terms in the position before stepping down in 1891. Not only was Twombly financially savvy, he also was a war hero. During the Battle of Fort Donelson during the Civil War, he picked up and carried his regiment's national colors after three other members of his regiment were killed or incapacitated by Confederate fire while attempting to secure the flag. Twombly received a Medal of Honor in 1897 for his heroic deeds during the battle.

Think Like... a Historian Card

Think Like a Historian

A person who explains changes that happened in the past.

- What happened in the past? Why is it important to understand what has happened in the past?
- How did past decisions or actions significantly transform people's lives?
- What has changed or stayed the same over time? Who benefited from the change? Why? Who did not benefit? Why?
- Who or what made changes happen? Who supported the change? Who didn't? Why?

Louise Noun (1908-2002)
Louise Frankel Rosenfield Noun spent her life preserving and sharing Iowa history. She was born in Des Moines to Meyer Rosenfield, owner of the Younker's department store, and Rose Frankel Rosenfield, a suffrage-supporting mother. Noun and Mary Louise Smith, the former chair of the Republican National Committee, worked together to found the Iowa Women's Archives at the University of Iowa Main Library. The archives include important manuscripts and papers which record women's history in Iowa. Louise Noun also authored numerous books and papers regarding feminist history in Iowa.

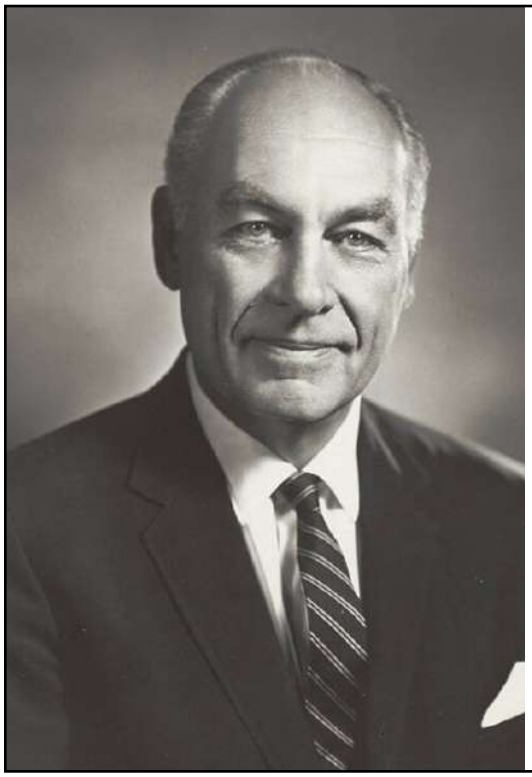
Photo Courtesy of Louise Rosenfield Noun Papers, Iowa Women's Archives, University of Iowa Libraries, Iowa City

Think Like... a Political Scientist Card

Think Like a Political Scientist

A person who studies governments and how they work.

- What problems might people have faced in this society?
- What rights do people have? What rights are people missing?
- What might lead to people being treated fairly? What might lead to people being treated unfairly?
- What information can be gathered about trends at this location or time period that might change or impact the future?



George Gallup (1901-1984)
A native of Jefferson, Iowa, and graduate of the University of Iowa, George Gallup invented the now famous Gallup Poll. The Gallup Poll is a method of survey sampling (asking different people the same question for their answers) to help figure out public opinion. Polls are important for elections and helpful for political scientists. The first instance of using the Gallup Poll for politics was the 1932 campaign of Gallup's mother-in-law, Ola Babcock Miller, who successfully ran for Iowa Secretary of State.

Think Like... a Journalist Card

Think Like a Journalist

A person who tells others about the story.

- What are the major headlines of this historical topic?
- What people would you want to interview? What questions would you ask?
- What details are needed to tell this particular story to people not from this area?
- Why is it important to share news about what is happening at this time period or this location?

George Mills (1906-2003)
There was not a story developing within the Iowa Capitol's hallways or chambers that George Mills did not cover for *The Des Moines Register* newspaper. Mills covered events and political news at the capitol building from 1943-1971 and later served as a reporter for television station WHO-TV. From 1943 to 1954, Mills was also the Iowa correspondent for *Time*, *Life* and *Fortune* magazines, writing Iowa stories for a national audience.

Iowa Core Social Studies Standards Chart

No.	Description	Read Iowa History	Read Aloud	History Mystery	Think Like...
SS.4.1.	Explain how a compelling question represents key ideas in the field.				
SS.4.2.	Use supporting questions to help answer the compelling question in an inquiry.				
SS.4.3.	Cite evidence that supports a response to supporting or compelling questions.				
SS.4.4.	Construct responses to compelling questions using reasoning, examples, and relevant details.				
SS.4.5.	Identify challenges and opportunities when taking action to address problems, including predicting possible results.				
SS.4.6.	Use a range of deliberative and democratic procedures to make decisions about and act on civic problems in their classrooms.				
SS.4.7.	Explain causes of conflict or collaboration among different social groups.				
SS.4.8.	Evaluate how civic virtues and democratic principles have guided or do guide governments, societies, and/or communities. (21st century skills)				
SS.4.9.	Explain how the enforcement of a specific ruling or law changed society. (21st century skills)				
SS.4.10.	Describe how societies have changed in the past and continue to change. (21st century skills)	X	X	X	
SS.4.11.	Describe how scarcity requires a person to make a choice and identify costs associated with that choice.		X		
SS.4.12.	Using historical and/or local examples, explain how competition has influenced the production of goods and services.		X	X	X
SS.4.13.	Compare and contrast different ways that the government interacts with the economy.				
SS.4.14.	Explain the reasons why the costs of goods and services rise and fall.				
SS.4.15.	Identify factors that can influence people's different spending and saving choices. (21st century skills)				
SS.4.16.	Determine the consequences of sharing personal information with others. (21st century skills)				
SS.4.17.	Create a geographic representation to illustrate how the natural resources in an area affect the decisions people make.				
SS.4.18.	Describe how environmental and cultural characteristics influence population distribution in specific places or regions.		X		
SS.4.19.	Explain influences on the development and decline of different modes of transportation in U.S. regions.				
SS.4.20.	Compare and contrast events that happened at the same time.				
SS.4.21.	Analyze conflicting perspectives on historical and current events/issues.				X
SS.4.22.	Infer the purpose of a primary source and from that the intended audience.	X			
SS.4.23.	Explain probable causes and effects of events and developments.		X		
SS.4.24.	Develop a claim about the past and cite evidence to support it.			X	
SS.4.25.	Analyze the impact of technological changes in Iowa, across time and place.		X	X	
SS.4.26.	Explain how Iowa's agriculture has changed over time.	X	X	X	

Iowa Core Literacy Standards Chart

No.	Description	Read Iowa History	Read Aloud	History Mystery	Think Like...
RL.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.		X		
RL.4.2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.		X		
RL.4.3	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).		X		
RI.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.		X		
RI.4.2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.	X	X		
RI.4.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	X	X		
RI.4.6	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.	X			
RI.4.9	Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.				
W.4.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information. • Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. • Provide reasons that are supported by facts and details. • Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition). • Provide a concluding statement or section related to the opinion presented.	X			
W.4.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly. • Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. • Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. • Link ideas within categories of information using words and phrases (e.g., another, for example, also, because). • Use precise language and domain-specific vocabulary to inform about or explain the topic. • Provide a concluding statement or section related to the information or explanation presented.	X			
W.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.	X			
W.4.8	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.	X			
SL.4.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. • Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. • Follow agreed-upon rules for discussions and carry out assigned roles. • Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. • Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.	X			
SL.4.3	Identify the reasons and evidence a speaker provides to support particular points.	X			
SL.4.4	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.	X			

**Only Iowa Core Literacy Standards applied in the Goldie's History Kit are listed.*

Goldie's History Kit Inventory List

Goldie's History Kit - Iowa's Corn and Agriculture Industry Manual

Book 1: *John Deere, That's Who!* by Tracy Nelson Maurer

Book 2: *The Biography of Corn* by L. Michelle Nielsen

Book 3: *The Kid Who Changed the World* by Andy Andrews

Book 4: *The Farm That Feeds Us: A Year in the Life of an Organic Farm* by Nancy Castaldo

History Mystery Object Photos

- Hand Planter
- Corn Planter
- Corn Knife
- Harvester Model
- Corn Husking Peg
- Pioneer Seed Bags
- Ethanol Poster

7 Think Like... Cards

- Norman Borlaug
- Ruth Buxton Sayre
- Ira Cook - Geographer
- Voltaire Twombly - Economist
- Louise Noun - Historian
- George Gallup - Political Scientist
- George Mills - Journalist

USB Flash Drive

- Student Worksheets and Vocabulary Cards
- Read Iowa History Primary Sources
- Photos of History Mystery Objects
- Videos of History Mystery Objects
- Digital Version of Think Like... Cards
- Digital Version of Iowa's Corn and Agriculture Industry Manual

Goldie's History Kit Container