



BHH Curriculum Units Third Grade Industrialization

This unit introduces the history of industrialization in the United States in the late 19th century. The development of mechanization and assembly line processes, reliance on unskilled labor, and geographic concentration of certain businesses shifted the U.S. economy from individual craftsman-based production to mass production. This shift took place over centuries, but accelerated rapidly in the U.S. in the late 1800's, both feeding and being fed by an explosion in immigration and the emergence of a large middle class.

Ultimately, these changes created a national-scale economy that required community and government action to curb and regulate problems for people and the environment, themes that are explored in the 2nd grade immigration and environment units and the 4th grade progressivism unit. The industrial economy generates wealth and a large middle class, but is also vulnerable to boom and bust cycles, which are explored in the 4th grade Great Depression unit. In the 3rd grade lessons, we lay the foundation for the 4th grade and review themes from 2nd grade units.

A simulation activity anchors the unit, with children producing notepads both individually and in an assembly line. Through this exercise, children may learn first hand the concepts of individual and mass production and explore the positive and negative aspects of both. Throughout the unit, students examine elements of industrialization, including invention, mechanization, and use of unskilled labor. The unit asks students to construct an ongoing inventory of industrialization's positive effects such as a growing middle class and improved standards of living for many Americans, and its unhealthy consequences such as urban poverty, environmental degradation and dangerous or demoralizing work conditions.

A video produced by Iowa Public Television, in collaboration with Bringing History Home, introduces children to many concepts in this unit. Directions for ordering this resource are available in the ["Contacts"](#) view of the BHH website.

Definitions (for teacher background) from *Random House College Dictionary* (1972):

"Industrialism"

1. an economic organization of society built largely on mechanized industry.

"Industrial Revolution"

1. the complex of social and economic changes resulting from the *mechanization of productive processes* that began in England around 1760.

Activity 1: Long, long ago – Farming, communication, sewing, and transportation

Content Goals:

- Students learn about long, long ago forms of communication, farming, sewing and transportation. The pre-industrial farming methods should be a review of a content theme also found in BHH 2nd grade environmental history.

Process Goals:

- Students engage in photo analysis.
- Students begin constructing a timeline.
- **Centerpieces:** Simulation activity & [photographs](#)
- **Activities:**
 - Introductory Discussion – Teacher provides an overview of the upcoming unit.
 - Photo analysis – Class begins a timeline of Industrial change over time.
 - This activity will be continued at various stages of the unit. The timeline does not include specific dates -- in its final form it includes *long, long ago* photos of farm, communication, sewing and transportation methods, *long ago* inventions that transformed these processes, and some of the forms the processes take *today*.
 - The teacher begins by projecting transparencies of long, long ago photos on an overhead. Students examine the photos.. Teacher frames the investigation with the [SOCC guide](#) and by asking if students know what these processes often look like today. How do we get our food? Our clothes? How do we talk to people who are not in the same room with us? How do we travel from place to place? Tools we use? These processes were not the same long, long ago as they are today. (Remind students of their 2nd grade environmental history unit, in which they studied changes in farming and logging over time.)
 - Tractor farming -- was preceded by -- Horse farming
 - Telephones and computer e-mail – were preceded by -- Letter writing
 - Automobiles and airplanes – were preceded by -- Horse-drawn wagons
 - Sewing machines – were preceded by -- Hand sewing
- ⌚ Class begins a timeline by pasting paper copies of the overhead photos into the dates

Resources:

- [Photos](#) for projection and paper copies
- Butcher paper for timeline
- [SOCC visual image analysis guide](#)

Activity 2: Individual Production by Skilled Craftsmen

Content Goals:

- Students become familiar with the concept of skilled craftsmen, individuals constructing a product from start to finish.

Process Goals:

- Students engage in a simulation activity.
 - **Centerpieces:** [Simulation Activity](#), Part one; Pictograph; [IPTV video](#)
 - **Content:** What is a skilled craftsman?
 - **Activities:**
 - Class views [IPTV video, Humans are not Machines and Machines are not Humans](#).
 - Simulation Activity
 - Students are encouraged to imagine themselves as craftsmen. They will make notepads to sell.
 - Please see [directions](#) for this simulation activity, provided in the Unit Resources view. Time the children as they each make one notepad. Stop time when the last pad is completed. Don't tell the children they are being timed.
 - After the children make notepads by hand, teacher leads a discussion about the process and outcomes. Sample questions:
 1. Are your notepads alike or different?
 2. How many notepads did the class make?
 3. What was the hardest thing about making the notepads?
 4. Can you imagine a faster or easier way to make the notepads?
 - [Pictograph](#) -- Using clipart pictures, students make a pictograph to illustrate how products are made by hand, by a single craftsman. Teacher may introduce this activity by explaining that the pictograph tells the story of how the children just made their notepads. This is a story about all sorts of people outside the classroom, too, about skilled craftsmen.
 - Together, the class makes a pictograph that illustrates the process of constructing a product as an individual craftsman.
 - These clipart pictures are found in the Unit Resources.
 - Concluding discussion: "individual production" – one person doing much of the work alone to make a product.



? Sample Questions

- How many people are in the pictograph?
- How large an area or space would this person need to work in?

Resources:

- [Simulation Activity](#) materials
- BHH [Pictograph](#) art
- [IPTV video, Humans are not Machines and Machines are not Humans](#)

Products:

- Notepads
- Pictograph

Activity 3: How do Inventions Change our Lives?

Content Goals:

- Students learn special inventions made it possible to produce/do things quicker using machines than by hand.

Process Goals:

- Students add inventors and inventions to the class timeline.
 - **Centerpieces:** [Historic images of inventions](#)
 - **Content:** Industrial inventions
 - **Process:**
 - Inventions Exploration
 1. Students choose an industrial invention to research.
 - Use website to research invention
 - Fill out graphic organizer:
When was _____ invented?
Who invented it?
How is it useful?
How has this invention changed over time?
 2. On 3x5 note card, draw invention and write the date. Share the invention graphic organizer with the whole class.
 3. Students place their note card images of inventions on the timeline.
 4. Class discusses how inventions worked, how they enabled people to make and do things more quickly.
 - Class examines pictures of inventors and their inventions.
 - Students paste photos of industrial inventions onto the original timeline, in a new section. “Inventions that Changed our Lives” becomes the second part of the timeline, after the section of long, long ago farming, communication, transportation and sewing methods.
 - Class discusses how the inventions worked and why they enabled people to make/do things more quickly or easily.



- For the final part of the timeline, “Life in the U.S. Today”, students paste in photos of modern tools such as cars, planes, tractors, computers, and sewing machines.
- Teacher may conclude with a set-up for the next part of the unit by asking students, “How did people make enough cars and planes and tractors and computers for most people in the country to have access to them?”

➤ **Product: Timeline, Part 2.**

➤ **Resources:**

[Photos of inventions.](#)

[Photos of modern tools.](#)

Activity 4: Mass Production – What is an Assembly Line?

Content Goals:

- Students learn assembly lines reduced the skill required to construct a product.
- Students learn assembly lines make it possible to produce products in less time and with less variation than when produced by a skilled craftsman.

Process Goals:

- Students simulate work on an assembly line.
- Students create a pictograph.
- Students engage in photo analysis.

➤ Centerpieces:

- Assembly line simulation
- [Photographs](#)
- [Pictograph](#) clipart
- *Extra cheese, Please!* (Peterson & Upitis, 1994)

➤ Activities:

- Assembly Line Simulation, Part 2. (See [simulation directions](#) in Unit Resources).
 - Have the children make notepads on the assembly line for the same amount of time you allowed individuals to complete their pads in Activity 1.
 - At the end of the time, stop production and discuss the process and outcomes.

? Sample questions:

- How many pads did the craftsmen make? How many notepads did the class assembly line make in the same amount of time?
- What was the hardest part?
- Are the pads alike or different?
- What was different about the way you made the pads on an assembly line and the way you made them individually?
- Did you enjoy one way more than another? Why?

- Do you think you would rather do your assembly line job day after day or the skilled craftsman’s job (produce the entire notepad alone) day after day?
 - What were some of the problems that happened on the assembly line? How did we solve those problems along the way to make the assembly line work better?
 - Why did the craftsmen notepad take longer to make than the pad made on an assembly line?
 - Did you like being a craftsmen or working on an assembly line better?
 - Would you like doing the same job everyday all day long as you did on the assembly line? Why or why not?
 - Who do you think can make more money creating their craftsmen or a factory that using an assembly line?
 - Let’s think about the things in your life, in school and in your homes today. Which of those things might best be made on assembly line? Why? Which things might be better if made by a craftsman? Why? (Possible answers: Children may recognize that some things require standardized parts and so are better made on assembly line, some people need to buy things cheaply – from an assembly line, furniture and art is often more valuable and interesting if made by a craftsman or individual artist.)
- Photo Analysis
 - Class examines photos of industrial processes inside factories, real-life assembly lines. Use the [SOCC guide](#).
 - Pictograph – Assembly Line Production.
 - Just as they did when they made a pictograph of skilled craftsmen in Activity 2, students use clipart pictures to illustrate how products are made by assembly line mass production. ([BHH Pictograph](#) Clipart in Resources.)
 - Class constructs pictograph on poster board. Again, teacher may frame this to reinforce the simulation activity and help children understand that assembly line production is the most prevalent form of production in the wider world.
- **Products:** Notepads and Pictograph

Resources:

- Simulation activity directions and materials
- [Factory photographs](#) and [SOCC guide](#)
- [BHH Pictograph](#) art and poster board
- [*Extra cheese, Please!*](#) (Peterson & Upitis, 1994)

[Composing Think Aloud](#) example for PWIM™ -- Go to the Unit Resources view.

Activity 5: Work and Home in the Late 1800's

Content Goals:

- Students learn various people of the late 19th century lived in different sorts of housing conditions depending on what sort of job they held.
- Students become familiar with working conditions in the 19th century industrial factories.
- Students learn workers on assembly lines did jobs that required little training and did not get paid very well.
- Students learn immigrants; children and women were many of the factory workers.

Process Goals:

- Students read historic accounts and narratives to expand their knowledge.
- Photo Analysis

Centerpieces:

- [*The Bobbin Girl* \(McCully, 1996\)](#)
- [Housing Photos from the 19th Century](#)

Activities:

□ [The Bobbin Girl](#)

? Focus questions to pose *before* reading, [The Bobbin Girl](#):

- What happened to labor? (It went from skilled craftsmen to unskilled workers on assembly lines at factories.)
- What happened to craftsmen? (lost money because things could be made on an assembly line faster and cheaper.)
- Who worked in the factory? (immigrants, women, children, sharecroppers who moved North to work in factories)

Read Aloud [The Bobbin Girl](#), then return to the focus questions and discuss with the class.

□ [Images of Homes](#)

1. Using photographs of various houses and tenements, students investigate how peoples' living conditions varied depending on their work. Teacher projects images and describes the sorts of workers or owners that might have lived in the various dwellings.
2. Encourage student empathy with questions about the dwellings – Do you think the family that lived here was ever hungry? Would you have felt safe here? Etc.
 - Business owners – palaces.
 - Skilled craftsmen, doctors, nurses, teachers, policemen – houses.
 - Unskilled factory workers – tenement apartments.

Resources:

- [Housing Photos from the 19th Century](#)
- [Bobbin Girl](#) (McCully, 1996)

Activity 6: How is Cloth Made?

Content Goals:

- Students learn how thread & cloth are made.
- Students learn the beginning of the textile industry was in Lowell, Massachusetts.

Process Goals:

- Students analyze photos to infer how machines changed over time in the textile industry.
- Students identify Lowell, Massachusetts on a U.S. map.

Centerpieces:

[Photos and brief histories of textile industry over time](#)

Book: Fabric (from Kindergarten FOSS™ Science kit)

Pieces of fabric

Activities:

? Pose focus questions:

- What are cloth and thread made of?
- How are cloth and thread made?

1. Group Stations: Place students into three groups and ask them to keep the focus questions in mind as they explore resources in each group. Rotate the children through all three stations. After visiting each station, the groups each discuss among themselves the answers to the focus questions.

- Station 1: Students observe pieces of cloth.
- Station 2: Students read [historical account of textile industry](#): *Long, long ago: The U.S. Textile Industry* (this is available on the BHH website.).
- Station 3: Students analyze photos in [the account](#) and seek to place the images of textile production machines in chronological order of their invention.

2. Read Aloud Fabric. Ask students to make connections with their group explorations, and have them share these aloud.

3. Show student where Lowell, Massachusetts would appear on your classroom map. Tape a spoon of thread to the map to illustrate Lowell.

Resources:

- [Photos and brief histories](#) of the textile industry over time
- Book: Fabric (from Kindergarten FOSS™ Science kit)
- Pieces of fabric

Activity 7: Workers and Bosses

Content Goals:

- Students identify problems with factory working conditions.
- Students explore power in the relationships between owners & bosses and workers.
- Students understand change can benefit some groups or individuals while harming others.

Process Goals:

- Students read for historic context.
- Students analyze photos of child labor and factory conditions.

Centerpieces:

- The War Between Bosses and Workers (by Diana Star Helmer/Perfection Learning)
- Child Labor photos

Activities:

- Read for Historic Context: The War Between Bosses and Workers
 1. The War Between Bosses and Workers
 - Pose Pre-reading focus question: Why doesn't mama want the children to work in the factory? (working conditions, you can get sick, papa was killed by a bomb at a union meeting)
 - Read Aloud Chapters 1-4, pages 4-17
 - PREDICT: What do you think the children will do?
 2. The War Between Bosses and Workers
 - Focus question: What is Molly's problem in the story?
 - What are some of the events that lead to a solution?
 - Read Aloud Chapters 5-8, pages 18-34 (Use a story map to organize problem and events.)
 3. The War Between Bosses and Workers
 - Read Aloud Chapters 8-9, pages 35-39
 - Ask students to brainstorm Pros and Cons of Industrialization. Place the Pros and Cons on a graphic organizer.
- Photo analysis: Students analyze [photos of child labor and factory conditions](#). This may be done in groups or together as a class with images on the overhead/ Use [SOCC guide](#).

Resources

- The War Between Bosses and Workers (by Diana Star Helmer/Perfection Learning)
- [Child Labor photos](#) (Link to external website) and [SOCC guide](#).



[Composing Think Aloud example](#) for PWIM™ -- Go to the Unit Resources view.

Activity 8: Steel

Content Goals:

- Students learn where and how steel was made in the late 1800's.
- Students learn that the Bessemer process created jobs for some workers but took away the jobs and power of the original steel workers who were called “puddlers”.
- Students learn the steel industry allowed people to create tall structures, bridges, and new ways of travel.

Process Goals:

- Students read a historical narrative for background knowledge.
- Students analyze historical photos
- Students add a steel artifact to the classroom map in PA, MD, IN, IL, & WI.

Centerpieces:

[Those Building Men](#) (Johnson & Moser, 2001)

[Ten Mile Day and the Building of the Transcontinental Railroad](#) (Holt and Company, 1993)

[Photos of cities long ago and today.](#)

Activities:

What does Steel have to do with Cities?

1. Examine [Then and Now photos](#) with the class. For each image, ask:
 - What are the differences between these photos?
 - Why and how did the city change?
2. Read Aloud [Those Building Men](#). Point out and model literacy strategies as you read.
3. Ask class to update and expand their list of the pros and cons of industrialization. Add the new ones to the graphic organizer. (tall structures built...bridges, skyscrapers, connecting of cities, ways to transport goods to more places, etc.)
4. Add a steel artifact to the classroom map in PA, MD, IN, IL, & WI to the classroom map.

⇒ Share with the class a story of long ago steel industry craftsmen, called puddlers, and their expertise in creating steel. Describe how their jobs were lost starting around 1855 when the Bessemer Process was developed to mass-produce steel. The process revolutionized the modern world, because large quantities of cheap steel made possible skyscrapers, cars, and many other modern designs.



❑ **What does Steel have to do with Railroads?**

1. Read Aloud Ten Mile Day

As you read, remind students of connections to other history themes they have studied:

- Immigrants who helped build the railroad, but were not treated fairly.
- Railroad building went on during the Civil War.
- Abraham Lincoln was the President to pass the Pacific Railroad Act in 1862.
- The telegraph was an invention that helped communicate the building of the railroad.)

2. Add a railroad icon to the classroom map.

Resources

- Those Building Men (Johnson & Moser, 2001)
- Ten Mile Day and the Building of the Transcontinental Railroad (Holt and Company, 1993)
- [Photos of cities long ago and today](#)
- Small object made of steel to place on the class map

Activity 9: How are Railroads and Hot Dogs related?

Content Goals:

- Students learn the railroads provided opportunities for industry to grow across the United States.
- Students learn refrigerated cars changed the way food was delivered from farms to markets.
- Students learn the early meat packing industry was based in Chicago.
- Students explore pros and cons of the industrial meat packing industry.

Process Goals:

- Students analyze photos of the meat packing industry.
- Students map Chicago, IL as the largest 19th century center of meat production.

Centerpieces:

[Historical photos and essay excerpts of the Chicago stockyards](#)

Activities:

1. To prepare children for their group explorations, pose the Focus Question: *What does packaged meat have to do with Chicago?*
2. In small groups, students analyze [photos and historical excerpts](#) from the meat packing industry to answer the focus question. When the groups have completed their analysis, they each share with the whole class their answers to the question.
3. Brainstorm to update the pros and cons of industrialization and add to the graphic organizer.
4. Place a plastic toy pig or cow on the map to mark Chicago.

Resources

[Photos and Essay excerpts on the Chicago stockyards](#)

Activity 10: Mind Map of Industrialization

Content Goal:

- Review of the unit.

Process Goals:

- Students compile a review list of terms and themes.
- Students create mind maps.
 - **Centerpiece:** All previous lessons.
 - **Content:** The ingredients of 19th century industrial society
 - **Activities:**
 1. All together, class brainstorms terms from the unit. Teacher writes the students' words on a list on poster paper or the overhead.
 2. In order to help students think categorically, teacher may lead a discussion on categorizing the terms by the lesson plan titles, i.e., "immigrants" could be categorized under unskilled labor and "railroads" could fall under inventions or steel.
 3. Students divide their pages into five or six sections, depending on the number of categories teacher delineates, and titles each section with a category.
 4. Students choose terms from the brainstorm list, at least one for each category, and draw picture symbols to illustrate them.

Resources:

- Knowledge and resources from previous unit lessons



Activity 11: The Pros and Cons of Industrialization

Content Goals:

- Students review the positives and negatives in the history of industrialization.
- Students understand that change may benefit an individual or group while harming a different individual or group.

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Process Goals:

- Students make value judgments based on their study of industrial history and criteria provided by teacher.

➤ Process:

- Students work in pairs to compile a list of changes wrought by industrialization.
- Consider each change: Who benefitted? Who was harmed? Did some people both benefit and suffer from the same change?
- Students share their lists with the class for discussion.

Resources:

- Knowledge and resources from previous unit lessons

[Final Composing Think Aloud](#) example for PWIM™ -- Go to the Unit Resources view.