



BHH ASSEMBLY LINE ACTIVITY

BHH in the classroom - Teacher Adaptations

Unit title and activity #: Industrialization Revolution Unit / Activity 4 Mass Production

Submitted by: Kim Heckart

Description of Activity: Students participate in an assembly line of mass production.

Day 1

1. Read Extra Cheese, Please (This is a story that shows students the process of how milk starts on a dairy farm and is taken to a factory to make cheese.)
2. On overhead, show sequence of Henry Ford's first assembly line. Read from Industrialization, where Henry Ford tells why the assembly line was important.

Day 2

1. Children discuss how craftsmen are different than an assembly line process. Remind the students of how they made their notebooks as a craftsmen and how long it took to make their notebook. (It took our class 38 minutes for everyone to complete their individual notebook.)
2. Discuss how we could make notebooks using an assembly line. Write their suggestions as a list. Examples:
 - Glue on cover (Student A and B)
 - Make a mud puddle. (Students C and D)
 - Glue on pig's body. (Student E) *button sorter (Student F and G)
 - Glue on pig's nose. (Student H) *button sorter (Student I and J)
 - Glue on the sun. (Student K) *button sorter (Student L and M)
 - Sharpie of the eyes. (Student N and O)
 - Draw on the feet. (Student P)
 - Draw on the tail. (Student Q)
 - Draw on the ears. (Student R)
 - Draw on the sun's rays. (Student S)
 - Checker (Student T)
3. Put names of students next to each job to complete the project on the assembly line.



Day 3

1. Arrange students' desk in a long row. Have students sit in desks according to their job on the assembly line. Button sorters will be at a separate table sorting the buttons they need to take to their area in the assembly line.
2. Students do the assembly line while teacher watches the time. (Ours took approximately 20 minutes.) Record time.
3. When all the notebooks are complete through the assembly line, discuss with students the process.
 - 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?
 - How come the craftsmen notepad took longer to make than the assembly line?
 - Comparing the notepads, which one have better quality? Why?
 - Did you like being a craftsmen or working on the assembly line better? Why?
 - 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 product a craftsmen or a factory that using an assembly line?

Day 4

1. Class makes a group pictograph using clipart pictures. The pictograph illustrates how products are made by an assembly line mass production.
 - Students glue clipart pictures onto poster board begun in Activity 1.

Reflection on student learning outcomes:

- ❖ Students have an amazing grasp of the craftsmen vs mass production of an assembly line.
- ❖ Students were so engaged in the assembly line that they weren't even aware of how much they learned.
- ❖ Will you do anything differently next time?
- ❖ Have kids make their own individual pictograph of the mass production activity using our assembly line activity (with digital pictures).



Standards Alignment

The National Center for History in the Schools National Standards for History (1996)

Standard 8A – Students understand the development of technological innovations, the major scientists and inventors associated with them and their social and economic effects.

Standard 8B – Students understand changes in transportation and their effects.

Standard 8C – Students understand changes in communication and their effects.

National Council for the Social Studies Curriculum for Social Studies (1994)

Standard 2 -- Time, Continuity and Change

Standard 3 -- People, Places, and Environment

Standard 7 -- Production, Distribution, and Consumption

Standard 8 -- Science, Technology, and Society

REVIEW OF THIRD GRADE UNIT – INDUSTRIAL REVOLUTION by Dr. M. Gail Hickey, Professor of Education

The Third Grade History Unit "Industrial Revolution" represents a strategy for introducing young students to an era of United States history marked by rapid advances in technology. While traditionally United States history is not introduced prior to fifth grade, recent research on children's comprehension of social studies concepts and content reveals young children develop historical understandings earlier than expected. Therefore, the unit is based upon appropriate pedagogical foundations. Levstik and Barton (1994) and Downey (1994), for example, found even early elementary grades children are capable of more historical understanding than educators originally thought. Young students' historical knowledge prior to fifth



grade, however, is limited primarily to information about popular culture and everyday life.

The "Industrial Revolution" instructional unit also draws upon curriculum standards identified by national educational organizations. The National Center for History in the Schools National Standards for History (1996) articulates what children kindergarten through fourth grade can know and do. "Family life now and in the recent past; family life in various places long ago", for example, is the history standard related to students' study of how farms changed over time, as is "Major discoveries in science and technology, their social and economic effects, and the scientists and inventors responsible for them". The same document lists history-related skills appropriate for teaching young students, such as "Historical comprehension: draw on data in historical maps; draw on visual and mathematical data represented in graphs; draw on the visual data presented in photographs, paintings, cartoons, and architectural drawings". Each of these content standards and historical skills is a focus of one or more lessons in the third grade unit "Industrial Revolution."



Lesson Plans

This unit introduces the history of industrialization in the United States in the late 19th century. The development of mechanization and assembly line production, reliance on unskilled labor, and corporate financing shifted the U.S. economy from individual craftsman-based production to mass production. This shift took place over centuries, but accelerated rapidly 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 abuses of 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 pictures 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 the “ingredients” of industrialization, including mechanization, formation of corporations and use of unskilled labor. The unit concludes with an exploration of industrialization’s positive effects such as a growing middle class and improved standards of living for many Americans and 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 found in the “Contacts” view of the BHH website.

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

- ❖ Industrialism: An economic organization of society built largely on mechanized industry.
- ❖ Industrial Revolution: The complex of social and economic changes resulting from the **mechanization of productive processes** that began in England about 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.

Process:

- ❖ 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 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. (You may wish to 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 first of three sections on a length of butcher paper. This timeline section may be labeled “Life long, long ago.”

Resources:

- ❖ Photos made into transparency and paper copies
- ❖ Butcher paper for timeline

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.
- ❖ Students create a pictograph.

Centerpiece:

- ❖ Pictograph clipart

Content:

- ❖ What is a skilled craftsman?

Process:

- ❖ Simulation Activity
 - Students are encouraged to imagine themselves as craftsmen. They will make notepads to sell.
 - **Please see separate 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:
 - Are your notepads alike or different?
 - How many notepads did the class make?
 - What was the hardest thing about making the notepads?
 - 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?

Products:

- ❖ Notepads
- ❖ Pictograph

Resources:

- ❖ Simulation Activity materials
- ❖ BHH Pictograph art
- ❖ Poster board for the production processes pictograph chart

Activity 3: Inventions – Industrial Change Over Time Timeline -- Parts 2 and 3.

Content Goals:

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

Process Goals:

- ❖ Students continue making a timeline.

Centerpiece:

- ❖ Book - [Iron Horses](#) (Kay & McCurdy, 1999).

Content:

- ❖ Industrial inventions



Process:

- ❖ Teacher reads **Iron Horses** to class.
- ❖ Class examines pictures of inventors and their inventions.
- ❖ This activity adds the second part to the timeline begun in Activity 1. 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

Content Goals:

- ❖ Students learn about assembly lines.

Process Goals:

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



Centerpiece:

- ❖ Assembly line simulation, Photographs, Pictograph clipart, book **Extra cheese, Please!** (Peterson & Uptis, 1994).

Process:

- ❖ Simulation Activity, Part 2. (See separate directions in Unit Resources)
 - Have the children make notepads on the assembly line for the same amount of time it took 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?
- ❖ Photo Analysis
 - Class examines photos of industrial processes inside factories, real-life assembly lines.
- ❖ 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. (Clipart in Misc. Resources.)
 - Class constructs pictograph on poster board. Again, teacher may frame this to reinforce the simulation activity and establish the children's understanding 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
- ❖ BHH Pictograph art and poster board



❖ Extra cheese, Please!

Activity 5: Corporations – Finding Money to Build Big Businesses

Content Goals:

- ❖ Students learn there are various types of business ownership.
- ❖ Students learn in the late 19th century **corporations** raised money to build and operate large businesses.
- ❖ Students learn corporations gather(ed) money from strangers. These people are owners of the corporations and are called **investors**.
- ❖ Students are introduced to the concept that **stock markets** were/are the places people gather(ed) to buy parts of corporations and become investors.

Process Goals:

- ❖ Students use pictograph to represent the differences between individual ownership and corporations.

Centerpiece:

- ❖ Pictograph chart

Process:

- ❖ (A) What is individual ownership? What is a partnership?
 - Begin a pictograph that illustrates individual ownership and partnerships.
 - The clipart pictures for this activity are in the Miscellaneous Resources view.
 - Students may volunteer to glue on the parts of the pictograph.
- ❖ (B) What is a corporation?
 - Teacher introduces the concept of corporate ownership by asking what sorts of things someone would need to build a factory.
 - If the children don't mention "a lot of money", teacher may introduce this point and ask where the money might come from. This provides an entry into the concept of multiple owners, of corporate ownership of businesses.
 - Class builds corporation into the ownership pictograph. Students may each receive a stick figure to decorate and paste on the chart. The finished chart includes single owners, partnerships and corporations.
 - Optional Discussion --teacher may ask students how the people who started corporations find other people to become owners with them.



- Stock markets are places where people buy pieces of corporations called “shares”. (This information is advanced – we introduce it here primarily to establish some prior awareness of stock markets for the 4th grade Depression unit. If you are concerned that it will confuse your students, you may skip this discussion...)
- Define “invest” – to put money into something you hope will give more money back than you put in.

Product:

- ❖ Pictograph

Resources:

- ❖ BHH pictograph art
- ❖ Cardboard background for chart

Activity 6: People of the Industrial World 100 Years Ago.

Content Goals:

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

Process Goals:

- ❖ Photo analysis
- ❖ Book discussion

Centerpiece:

- ❖ Housing photos, books -- **The Bobbin Girl** (McCully, 1996), optional: **The House in the Mail** (Wells, 2002).

Content:

- ❖ How did people in the cities live in the late 19th century?



Process:

- ❖ Using photographs of various houses and tenements, students investigate how peoples' living conditions varied depending on their work. Photos may be shown on an overhead projector as teacher describes the sorts of workers or owners that might have lived in the various dwellings. Student empathy may be encouraged with questions about the dwellings – would you have liked to live here? Do you think the family that lived here was ever hungry? Etc.
 - Business owners – palaces.
 - Skilled craftsmen, doctors, nurses, teachers, policemen – houses.
 - Unskilled factory workers – tenement apartments.
- ❖ What was life like for unskilled workers?
 - Teacher reads **Bobbin Girl** to class.
 - Class discusses life for unskilled workers.

Resources:

- ❖ Photos
- ❖ **Bobbin Girl**
- ❖ Optional: **The House in the Mail**

Activity 7: Industrialization Growth Patterns

Content Goals:

- ❖ Students learn big business centers spread across the United States.

Process Goals:

- ❖ Reading charts and maps for historical information.

Centerpiece:

- ❖ Book: **Those Building Men** (Johnson & Moser, 2001), maps illustrating US industrial growth in the late 1800's to early 1900's:
<http://www.bedfordstmartins.com/historymodules/modules/mod19/imap.htm>

Process:

- ❖ Read aloud **Those Building Men**.
- ❖ Map exercise: Class examines maps on overhead projector. Some explorations on the Bedford St. Martins site maps include:



- Products manufactured in 20 Largest cities, 1865-1900
 - Immigration by 1910
 - Natural Resources, 1865-1900
 - Railroad development 1870-1890
 - U.S. Topography
- ❖ **Optional:** Class examines their own community's local trends for the same period. You may wish to include local businesses and population at the turn of the 19th/20th centuries. Basic information of this sort will be available through local museums, archives or history books. Please see M. Gail Hickey's **Bringing History Home** (Pearson Allyn & Bacon, 1998) for an excellent teacher's guide to researching local history for use in the elementary classroom.

Resources:

- ❖ **Those Building Men**
- ❖ Transparency copies of maps from <http://www.bedfordstmartins.com/historymodules/modules/mod19/imap.htm>
- ❖ Local information

Activity 8: Mind Map of Industrialization

Content Goals:

- ❖ 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

Process:

- ❖ All together, class brainstorms terms from the unit. Teacher writes the students' words on a list on poster paper or the overhead.



- ❖ 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 “stock market” could fall under corporations.
- ❖ Students divide their pages into five or six sections, depending on the number of categories teacher delineates, and titles each section with a category.
- ❖ Students choose terms from the brainstorm list, at least one for each category, and draw picture symbols to illustrate them.

Product:

- ❖ Mind Map

Activity 9: The Pros and Cons of Industrialization

Content Goals:

- ❖ Students begin to recognize both positives and negatives are found in the history of industrialization.

Process Goals:

- ❖ Students make value judgments based on their study of industrial history.

Centerpiece:

- ❖ **The Milkman’s Boy** (Hall & Shed, 1997).

Process:

- ❖ Students work in pairs to compile a list of the positives and negatives of industrialization.
- ❖ Teacher encourages students to think about their 2nd grade environmental and immigration history units – does it have anything to do with what we are studying this year?
- ❖ Students share their lists with the class for discussion.

Product:

- ❖ Lists of the good and bad elements of industrialization.

Resources:

- ❖ Previous lessons.



❖ The Milkman's Boy



Vocabulary List

Assembly line	A process in which the job of making a product is divided into many smaller jobs. Each worker assembles the same part on every item made. The workers stay in the same place while the individual items pass slowly by on a moving belt or track.
Businessman	A person who works in a business, especially as an owner or manager.
Corporation	A business that is allowed by law to act as a single person, even though it is made up of many people who all own a part or share of the company. The amount one person owns is determined by how many shares of the company he or she owns.
Craftsman	A person with a special skill in making things from wood, clay, yarn, metal, etc.
Factory	A building or group of buildings where products are made, especially by machinery.
Immigrant	A person who comes into a foreign country to make a new home.
Industry	A branch of business, especially manufacturing (automobile).
Investor	A person or company that uses or lends money to make more money.
Labor	Physical work. Workers as a group.
Machine	A thing made up of fixed and moving parts, for doing some kind of work.
Mechanization	The system of using machines, interchangeable parts, and unskilled workers on an assembly line to make a product (mass production).
Partnership	A business firm that is made up of two or more partners.



Power	Energy or force that can be put to work (electricity).
Production	The act or process of making or manufacturing a product.
Stock	Shares of ownership in a company. Stock holder owns shares. Stock is sold to raise money to help the company to get bigger
“Stock Market”	A place where shares of stock in companies are offered for sale. The most famous one is the New York Stock Exchange.
Tenement	An apartment building, usually in a poor neighborhood of a city.



Bringing History Home – Student Learning Chart

Activity #:		Student Name:	
Unit Title:			

Content Goals	Thorough Understanding Demonstrated by (4-5 pts)	Limited Understanding Demonstrated by (2-3 pts)	Does Not Understand Demonstrated by (0-1 pts)
Totals:			

Process Goals	Thorough Understanding Demonstrated by (4-5 pts)	Limited Understanding Demonstrated by (2-3 pts)	Does Not Understand Demonstrated by (0-1 pts)
Totals:			



Increasing Literacy through History Learning

Correlates to Industrialization Lesson Plans

http://www.bringinghistoryhome.org/downloads/Third/3_Ind_LessonPlan.pdf

Activity 1: Long, Long Ago – Farming, Communication, Sewing, and Transportation

Literacy Activities in the Lesson:

1. Schema use / accessing Prior Knowledge: Students are asked to think back to the environmental unit and think about farming and logging over time.
2. KWL/Graphic organizer: Students use questioning strategies while viewing historical photos.
3. Sequencing: students add photos to a timeline and tell the historical story of the timeline.

Activity 2: Individual Production by Skilled Craftsmen

Literacy Activities in the Lesson:

1. Questioning: through questioning, students reflect on their process of being a craftsman.
2. Sequencing: Students create a pictograph of the new vocabulary word “craftsmen.”

Activity 3: Inventions – Industrial Change Over Time Timeline -- Parts 2 and 3

Literacy Activities in the Lesson:

1. Questioning: During and following a read aloud of Iron Horses, students use questioning strategies to examine inventors and inventions.
2. Sequencing: Students add invention dates to the unit timeline.



Activity 4: Mass Production

Literacy Activities in the Lesson:

1. Compare and Contrast: students compare assembly line production of creating notepads to that of when they created the notepads as a craftsmen.
2. Sequencing: Students create a sequence on paper of how the process of the assembly line and who will be in charge of each job for the assembly line.
3. Questioning during **Extra Cheese Please!** read aloud: focus on how the milk gets from the farm to the factory to make cheese.

Activity 5: Corporations – Finding Money to Build Big Businesses

Literacy Activities in the Lesson:

- ❖ Vocabulary development: Focus on “single owner,” “partnership,” and “corporation.” Students create a pictograph and a draft a written definition of each.

Activity 6: People of the Industrial World 100 Years Ago

Literacy Activities in the Lesson:

- ❖ Vocabulary development: Focus on “invest and “shares.”

Activity 7: Industrialization Growth Patterns

Literacy Activities in the Lesson:

1. Questioning: read aloud **Those Building Men** while questioning about how buildings are constructed.
2. Graphic Organizer: map populations in the US.

Activity 8: Mind Map of Industrialization

Literacy Activities in the Lesson:

1. Synthesizing: Students use prior knowledge to create a mind map with pictures and or words of concepts learned in the unit.



2. Graphic organizer: Students create a chart of things learned in preparation to create their mind maps.

Activity 9: The Pros and Cons of Industrialization

Literacy Activities in the Lesson:

1. Questioning and Inferring: During a read aloud of **The Milkman's Boy**, students think about and consider pros and cons of industrialization and how it impacts people's lives.
2. Schema/Prior Knowledge: Teacher questions students about how the industrialization themes relate to the immigration and environmental units from second grade.



Teacher Adaptation

A Shortened Version of the BHH Unit

Designed and Piloted by the 3rd Grade Teachers of Washington Community School District in Washington, Iowa

Introduction

This abridged version of the BHH industrialization is an excellent revision, recommended for teachers with less time to teach history, or for teachers that prefer not to introduce the economic concepts in the original BHH unit.

The lessons do not include a set of history sources—photos, graphics, etc. Teachers may wish to use the resources provided for the original unit on the BHH website.

Adapted Activity 1: Individual Production—When skilled craftsmen were the cornerstone of industry

This activity should be preceded by Activity #1 in the original BHH Industrialization unit. In that activity, the class begins constructing a timeline for Industrialization.

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.
- ❖ Students create a pictograph.
- ❖ Students engage in photo analysis.

Centerpieces:

- ❖ Simulation activity, photographs, pictograph clipart

Content:

- ❖ Individual production processes-what were/are skilled craftsmen?

Process:

- ❖ Introductory Discussion.
- ❖ Photo Analysis—Building a Timeline

Teacher puts photo transparencies of skilled craftsmen at work on overhead projector. Students examine the photos.

Questions to Guide Student Photo Analysis

- How many people are in the picture?
- What do you think they are making?
- What sort of tools are the people using? Are they machine-powered tools?
- How large an area or space would they need to work in?
- Do you think we still make these things primarily by hand?
- Would it take a long time or a short time to make _____ by hand?
- Class begins a timeline by pasting up pictures of farm processes and tools from long, long ago.

❖ Simulation Activity

Students are encouraged to imagine themselves as craftsmen. They will be creating mini autograph books to sell which is how they make their living. The children put together the autograph book and you time them. Stop time when the last person is finished. **DON'T TELL THEM THEY ARE BEING TIMED.** At the end of the time, the class will examine the autograph books and discuss:

1. Are the autograph books alike or different?
2. How many autograph books did the class make total?
3. What was the hardest thing about making the autograph books?
4. Can you think of a faster or easier way to make the autograph books?

Pictograph—Using clipart pictures, class will make a pictograph to illustrate how products are made by hand, by a single craftsman. Teacher may introduce the 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, skilled craftsmen. Create a class pictograph and hang up in room.

Activity 2: Inventions and Industrial Change over Time

Content Goals:

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

Process Goals:

- ❖ Students continue making a timeline.

Centerpiece:

- ❖ Iron Horses (Kay & McCurdy, 1999), invention sheet, list of inventions and inventors books. (Eli Whitney, Thomas Edison, Orville and Wilbur Wright, Henry Ford, Alexander Graham Bell)

Content:

- ❖ Industrial inventions

Process:

- ❖ Teacher reads aloud Iron Horses to class.
- ❖ Divide class into 5 small groups. Teacher gives each group an invention sheet (see attached) and assigns each group one of the inventor books to read. The groups will read the books and fill out the invention sheets. Tell each group that they are going to be experts of their book and will present the information to the rest of the class. The group will find when invention was made, who invented it, how it is useful, and how it has changed over time. The students will then present their findings to the class.
- ❖ As a class discuss how these inventions made production faster than by hand.
- ❖ Teacher may conclude with a set-up for the next part of the unit by asking the students, "How did people make enough cars and planes and tractors and computers for most people in the country to have access to them?"
- ❖ This activity adds to the timeline. As a class paste photos of industrial inventions onto the original timeline in the 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.
- ❖ For the final part of the timeline, "Life in the U.S. Today", class will paste in photos of modern tools such as cars, planes, tractors, computers, and sewing machines.



Activity 3: Mass Production

Content Goals:

Students learn about assembly lines.

Process Goals:

- ❖ Students simulate work on an assembly line.
- ❖ Students add to class pictograph.

Centerpiece:

- ❖ Assembly line simulation, photographs, pictograph clipart, Extra Cheese, Please! (Peterson & Uptis, 1994).

Process:

- ❖ Divide the class into groups. Each group is given tools to create same autograph notebooks. Each group will be given a sample of what notebook should look like.
- ❖ The groups are given a designated amount of time (try and use the same amount of time that it took them to do individual notepads).
- ❖ At the end of the time the class examines the autograph books and discusses:
 - How many autograph books did the whole class make?
 - What was the hardest part?
 - Are the autograph books alike or different?
 - What was different about the ways you made these autograph books today from the other day?
 - What way did you enjoy better? Why?
 - Do you think you would rather do your assembly line job day after day or the skilled craftsmen's job?
 - OPTIONAL: Class can then examine photos of industrial processes inside factories, real-life assembly lines.
- ❖ Complete assembly line part of class pictograph.

Activity 4: People of the Industrial World 100 Years Ago

Content Goals:

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

Process Goals:

- ❖ Book discussion, photo analysis.

Centerpiece:

- ❖ Housing photos, *The Bobbin Girl* (McCully, 1996)

Process:

- ❖ Using photographs of various houses and tenements, students investigate how peoples' living conditions varied depending on their work. Photos may be shown on an overhead projector as teacher describes the sorts of workers or owners that might have lived in the various dwellings. Student empathy may be encouraged with questions about the dwellings – would you have liked to live here? Do you think the family that lived here was ever hungry? Etc.
 - Large Business owners – palaces.
 - Skilled craftsmen, doctors, nurses, teachers, policemen – houses.
 - Unskilled factory workers – tenement apartments.
- ❖ What was life like for unskilled workers? Teacher reads *The Bobbin Girl* to class. Class discusses life for unskilled workers.

Teacher explains how factories were built in places farther and farther West (railroads made this possible.)

- ❖ • Class together compiles a list of the pros/cons of industrialization.

Links to Selected Websites

Third Grade: Industrialization History

- Topic: Industrialization Timelines

1752-1990 Technology (Both interactive and text only lines)
<http://www.pbs.org/wgbh/amex/telephone/timeline/index.html>

1845-1916
<http://pinzler.com/ushistory/timeline7.html>

1698-1908 Industrial Innovations
http://www.intellicosm.net/timeline_industrialization.htm

Inventors
<http://americanhistory.about.com/library/charts/blchartindrev.htm>

Steel magnate Andrew Carnegie (Timeline overlays his life events with larger national events.)
<http://www.pbs.org/wgbh/amex/carnegie/timeline/timeline/timeline.html>

- Topic: Background Resources

Center for Lowell History
<http://library.uml.edu/clh/index.Html>

Lowell Mill Girl, Decide Eliza Paige's Future!
 On the University of Massachusetts Center for Lowell History website. On this interactive site, children follow and participate in the story of a young 19th century textile worker. At various times in her life, Eliza must make decisions about where to live, work, etc. The activity engages students in making the decisions for Eliza and then seeing the consequences of their choices. A good introduction to contingency in history.
http://www.uml.edu/tsongas/MGIRL/page_00/index.htm

A Smithsonian Introduction to the Unit topic
<http://www.digitalhistory.uh.edu/database/subtitles.cfm?titleID=60>
http://americanhistory.si.edu/presidency/timeline/pres_era/3_655.html

Indexed Links to Industrialization Sites
<http://www.teacheroz.com/19thcent.htm#industrial>
<http://www.teacheroz.com/19thcent.htm#women>
<http://www.teacheroz.com/19thcent.htm#gilded>

Agricultural Industrialization
<http://www.memory.loc.gov/ammem/ndlpedu/collections/ngp/history.html>

The Westinghouse Works – Inside an American Factory
<http://www.memory.loc.gov/ammem/ndlpedu/collections/wes/index.html>

Sheet Music for Industrialization era music
<http://memory.loc.gov/learn/lessons/99/sing/intro.html>

Small town USA – period photos
<http://memory.loc.gov/ammem/award97/nyplhtml/dennhome.html>

Chicago Daily News Photos 1902-1933
<http://memory.loc.gov/ammem/ndlpcoop/ichihtml/cdnhome.html>

The Wright Brothers
<http://memory.loc.gov/ammem/wrighthtml/wrighthome.html>

Moving Pictures 1894-1915
<http://memory.loc.gov/ammem/awlhtml/awlhome.html>



Booklist

Iron Horses (Kay, V & McCurdy, M., 1999. Putnam Publishing Group.)

Extra cheese, Please! (Peterson, P. & Uptis, A., 1994. Boyds Mills Press.)

The Bobbin Girl (Emily Arnold McCully, 1996. Dial Books for Young Readers.)

The House in the Mail (Rosemary Wells, et al., 2004. Puffin.)

Those Building Men (Johnson, A. & Moser, B., 2001. Blue Sky Press.)

The Milkman's Boy (Hall, D. & Shed, G., 1997. Walker & Co.)