

# The Grinding Gears of America

## OVERVIEW

Students are going to explore the beginnings of the Industrial Revolution in the United States. They will also examine the political, economic, and social impact of the Industrial Revolution. Students will be exposed to video clips, musical slide shows, informative websites, picture, graphic organizers, and hands-on activities.

## TIME ALLOTMENT

4-8 Days

## SUBJECT MATTER

Social Studies  
Science  
Reading  
Language Arts  
Computer Literacy

## LEARNING OBJECTIVES

Cognitive Objective: The student will be able to identify people, places and events of the Industrial Revolution in the United States

Language Objective: The student will identify vocabulary associated with the Industrial Revolution in the United States.

Metacognitive Objective: The student will evaluate the political, economic, and social impact of the Industrial Revolution on the United States.

## STANDARDS

**Social Studies-Chapter 113 TEKS**

8.13c Economics. The student understands why various sections of the United States developed different patterns of economic activity. The student is expected to analyze the causes and effects of economic differences among different regions of the United States at selected times in U.S. history.

8.14b Economics. The student understands how various economic forces resulted in the Industrial Revolution in the 19th century. The student is expected to identify the economic factors that brought about rapid industrialization and urbanization.

8.28a Science, technology, and society. The student understands the impact of science and technology on the economic development of the United States. The student is expected to explain the effects of technological and scientific innovations such as the steamboat, the cotton gin, and the Bessemer steel process.

8.28b Science, technology, and society. The student understands the impact of science and technology on the economic development of the United States. The student is expected to analyze the impact of transportation systems on the growth, development, and urbanization of the United States.

8.28c Science, technology, and society. The student understands the impact of science and technology on the economic development of the United States. The student is expected to analyze how technological innovations changed the way goods were manufactured and marketed, nationally and internationally.

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8.28d Science, technology, and society. The student understands the impact of science and technology on the economic development of the United States. The student is expected to explain how technological innovations led to rapid industrialization.

8.29a Science, technology, and society. The student understands the impact of scientific discoveries and technological innovations on daily life in the United States. The student is expected to compare the effects of scientific discoveries and technological innovations that have influenced daily life in different periods in U.S. history.

8.29b Science, technology, and society. The student understands the impact of scientific discoveries and technological innovations on daily life in the United States. The student is expected to describe how scientific ideas influenced technological developments during different periods in U.S. history.

8.29c Science, technology, and society. The student understands the impact of scientific discoveries and technological innovations on daily life in the United States. The student is expected to identify examples of how industrialization changed life in the United States.

8.30/US24/WH25 Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.

8.31/US 25/WH26 Social studies skills. The student communicates in written, oral, and visual forms.

8.32/US 26/WH 27 Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.

US2b History. The student understands the political, economic, and social changes in the United States from 1877 to 1898. The student is expected to analyze economic issues such as industrialization, the growth of railroads, the growth of labor unions, farm issues, and the rise of big business

US2c History. The student understands the political, economic, and social changes in the United States from 1877 to 1898. The student is expected to analyze social issues such as the

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treatment of minorities, child labor, growth of cities, and problems of immigrants.

WH 23a Science, technology, and society. The student understands how major scientific and mathematical discoveries and technological innovations have affected societies throughout history. The student is expected to give examples of major mathematical and scientific discoveries and technological innovations that occurred at different periods in history and describe the changes produced by these discoveries and innovations.

WH 24a Science, technology, and society. The student understands connections between major developments in science and technology and the growth of industrial economies and societies in the 18th, 19th, and 20th centuries. The student is expected to explain the causes of industrialization and evaluate both short-term and long-term impact on societies.

## MEDIA COMPONENTS

### INTERNET RESOURCES

<http://www.freeplaymusic.com/>  
<http://www.pbs.org/wnet/historyofus/web04/segment1.html>  
<http://www.pbs.org/wnet/historyofus/web04/segment4.html>  
<http://inventors.about.com/cs/astartinventions/a/HollandThompson.htm>  
<http://images.google.com>  
<http://www.saisd.net/ADMIN/curric/SStudies/tip1.htm>  
<http://www.microsoft.com/windowsxp/moviemaker/getstarted/default.asp>  
<http://www.apple.com/imovie/>

## MATERIALS

### PER STUDENT

- The Effective Factory (3 Pages)
- Webbing Diagram– Machines
- Webbing Diagram – Agricultural Revolution
- Handout – Coming to America
- Graphic Organizer – Casual Chain to Multiple Effects (2 Pages)
- The Effects of Industrialization – Point of View

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- Life in a Factory – 4 photos
- Life in a Factory – Reaction and analysis
- Cardstock
- Pen/pencil
- Map colors/markers
- Scissors
- Glue/clear tape

Computer with Internet connection

## PREP FOR TEACHERS

- Run off all handouts
- Reserve computer lab for tech days (3-5 Days)
- Predetermine cooperative groups of 4
- Run off/create all overheads
- Bookmark all websites used during the lesson
- Create a musical slide show showing the Industrial Revolution. For background music, you can download copyright-free files at <http://www.freeplaymusic.com/>

## INTRODUCTORY ACTIVITY: SETTING THE STAGE

Day 1 – 10 minutes

- Before class begins, have the Machine webbing diagram either on the board or on the overhead
- Break students into their groups
- Have students work in their groups to write their definition for the word “machine”
- Have one member from each of the groups report their definition to the rest of the class
- After the groups have finished, discuss with the students different types of machines that exist today
- Each group is to fill in the webbing diagram demonstrating different types of machines that they use on an almost daily basis
- Ask each group for a machine and write their responses on your webbing diagram that is either on the board or on the overhead.
- Discuss with students about machines that create finished goods, such as

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- clothing. Ask them to describe what life would be like if those machines did not exist.
- Review the following vocabulary words related to the Industrial Revolution: Factory System, Industrial Revolution, urbanization, Agricultural Revolution, and textile.
- Introduce the concept of the American Industrial Revolution and briefly describe how it changed the United States.
- Discuss with the students the objectives of the lesson.

## LEARNING ACTIVITIES

Day 1 – 20 minutes ~ Coming to America

- In their groups either at a computer station, or at their desks, hand out the “Coming to America” organizer.
- (Media Interaction) Either using the PBS website “Wake Up America – Introduction,” printouts of the website, or other resources, have students fill out the organizer. Make sure that the students are providing details to fully explain their answers.
- <http://www.pbs.org/wnet/historyofus/web04/segment1.html> ~ PBS Website
- Have students discuss in their groups whether or not Samuel Slater could be considered an important person in American history. Have them debate whether or not Slater was right or wrong for doing what he had done.

Day 1 – 15 minutes ~ Life in a Factory

- (Media Interaction) In their groups, have students go to “Segment 4 – The Darker Side of Progress” and read about the conditions of working in a factory. If internet connections are not available, hand out printouts of the website or use another source.
  - <http://www.pbs.org/wnet/historyofus/web04/segment4.html> - Segment 4
- While they are reading, have students use the Cornell Notes strategy in their notebooks.
- Hand out the “Life in a Factory” handouts to the students.

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- Each group member is responsible for one of the pictures. They are to role play the people or person in their assigned photograph. Students can either act out their scene orally or write it out on the second page of the handouts.

### Day 2 – 20 Minutes - The Agricultural Revolution

- (Media Interaction) In their groups students are to use the inventors.about.com website, printouts of the website, or other resources to research the Agricultural Revolution.
  - <http://inventors.about.com/cs/astartinventions/a/HollandThompson.htm>
- While they are conducting their research, students are to use Agricultural Revolution webbing diagram to record their notes. Have students focus on people, inventions, and innovations.
- Discuss with the class how the Industrial Revolution and the Agricultural Revolution contributed to the economic, political, and social aspects of the United States.

### Day 2 – 30 Minutes - The Effects of Industrialization – Point of View

- Hand out the “Effects of Industrialization” cards.
- In their groups, have the students read the cards to each other.
- Once they have completed their reading, have the students mix up the cards
- Each student is to take a turn drawing a card. The student reads the card to the other three and they must guess who that person is.
- Repeat the process until you feel the students are familiar with the effects of the Industrial Revolution

### Day 3 – 20 Minutes - The Causes and Effects of the Industrial Revolution

- Handout the blank graphic organizer “The Industrial Revolution in the United States.
- Using their notes and other resources, students are to fill out the graphic organizer.

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- The top three boxes are to relate the steps taken before the Industrial Revolution came to the U.S. (see example)
- The bottom boxes are for the effects of the Industrial Revolution.
- Once completed discuss with the students their graphic organizers.

## CULMINATING ACTIVITY

### Day 3-4 - The Effective Factory

- Hand out the “Effective Factory Handouts” to the students.
- Using their notes and other resources, they are to fill out the different sides of the factory building. The wheel is to be attached to the “Where Did it Begin?” side.
- Have students assemble their factories by using scissors, tape, and/or glue.

### Days 5 – 8 - The Musical Slide Show (Media Interaction)

\* Both iMovie and Windows Movie Maker are freedownloads\*

- In the computer lab, have students use the Google Image Search engine to find pictures of the Industrial Revolution.
  - <http://images.google.com> - Image Search Engine
  - <http://www.saisd.net/ADMIN/curric/SStudies/tip1.htm> - How to use Google
  - <http://www.freeplaymusic.com/> - Copyright free background music
- Make sure that students are saving their pictures in the correct folder and are following proper citing parameters.
- Using iMovie for the Macintosh or Windows Movie Maker for Windows XP computers, have students create a musical slide show using their pictures and captured music.
  - <http://www.microsoft.com/windowsxp/moviemaker/getstarted/default.asp> - Instructions on how to use Windows Movie Maker

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- <http://www.apple.com/imovie/>  
- Looking for information on iMovie

Once they have completed their slide show, have students save/export their slideshows as movies.

## CROSS-CURRICULAR ACTIVITIES

### LANGUAGE ARTS

Students are to write a reflection on how their lives have been changed by the Industrial Revolution. Have them explain whether or not life would have been better if the Industrial Revolution had not occurred.

## COMMUNITY CONNECTIONS

Have local speakers from manufacturing companies come in to talk with your students.

## STUDENT MATERIALS

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- The Effects of Industrialization – Point of View
- Life in a Factory – 4 photos
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- Cardstock
- Pen/pencil
- Map colors/markers
- Scissors
- Glue/clear tape
- Computer with Internet connection

## ADDITIONAL WEB SITES

### GENERAL INFORMATION

- <http://www.fordham.edu/halsall/mod/modsbook14.html>
- <http://history.evansville.net/industry.html>

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- <http://socserv2.socsci.mcmaster.ca/%7Eecon/ugcm/3ll3/toynbee/indrev>
- <http://members.aol.com/mhirotsu/kevin/trip2.html>
- <http://www.osv.org/education/WaterPower/index.html>
- <http://www.darex.com/indurevo.htm>

### EARLY FACTORIES

- <http://www.slatermill.org/>
- <http://www.nps.gov/lowe/loweweb/LowellHistory/prologue.htm>

### INNOVATIONS

- <http://www.fordham.edu/halsall/mod/1823cotton.html>
- <http://www.spartacus.schoolnet.co.uk/TEXjenny.htm>
- [http://college.hmco.com/history/readerscomp/rcah/html/ah\\_092300\\_whitneyeli.htm](http://college.hmco.com/history/readerscomp/rcah/html/ah_092300_whitneyeli.htm)

### CONDITIONS IN FACTORIES

- <http://www.spartacus.schoolnet.co.uk/IRchild.main.htm>
- <http://www.womeninworldhistory.com/lesson7.html>

### CHANGES IN TRANSPORTATION

- <http://www.connerprairie.org/historyonline/ntlroad.html>
- <http://www.fhwa.dot.gov/rakeman/1795.htm>
- <http://lcweb.loc.gov/exhibits/treasures/trr024.html>
- <http://www.history.rochester.edu/steam/dickinson/>
- <http://www.history.rochester.edu/canal/>
- <http://www.borail.org/>

### CHANGES IN COMMUNICATION

- <http://www.150.si.edu/150trav/remember/r819.htm>
- <http://inventors.about.com/library/inventors/bltelegraph.htm>

### CHANGES IN AGRICULTURE

- [http://www.invent.org/hall\\_of\\_fame/101.html](http://www.invent.org/hall_of_fame/101.html)

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- [http://www.invent.org/hall\\_of\\_fame/39.html](http://www.invent.org/hall_of_fame/39.html)
  - [http://www.history.rochester.edu/Scientific\\_American/mystery/howe.htm](http://www.history.rochester.edu/Scientific_American/mystery/howe.htm)
  - [http://www.invent.org/hall\\_of\\_fame/152.html](http://www.invent.org/hall_of_fame/152.html)
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APPENDIX A: THE EFFECTIVE FACTORY

The graphic organizer is shaped like a house with a chimney on the left side. It is divided into three main sections:

- Left Gable:** A triangular section containing the text "Where Did It Begin?".
- Right Gable:** A triangular section containing the text "Contributors to the Agricultural Revolution" and three horizontal lines for notes.
- Right Wall:** A rectangular section containing the text "Contributors to the Industrial Revolution" and five horizontal lines for notes.

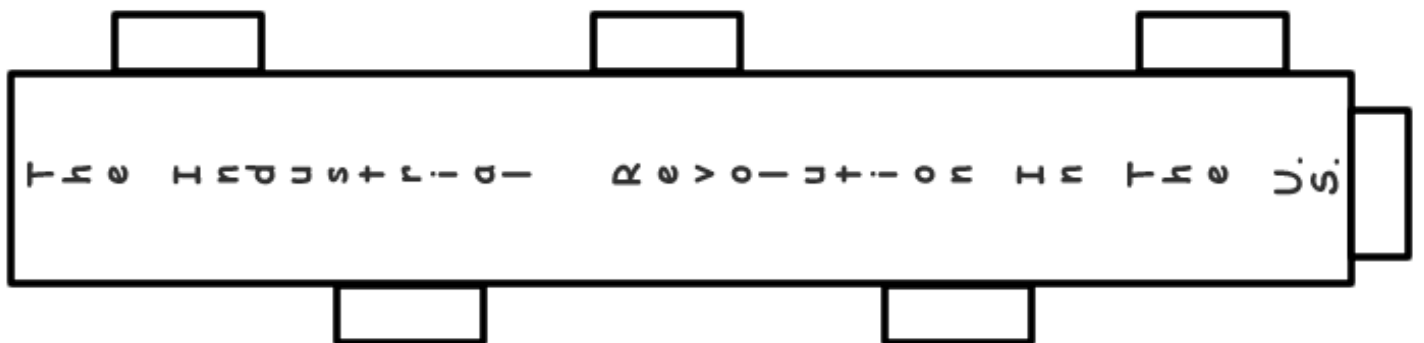
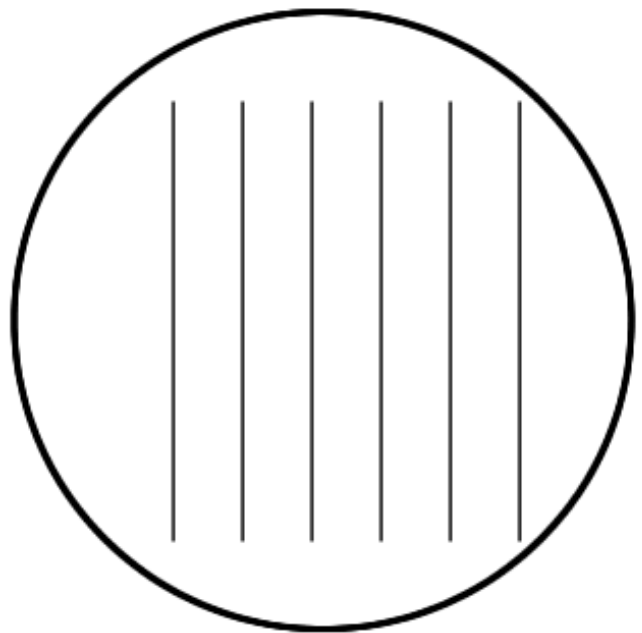
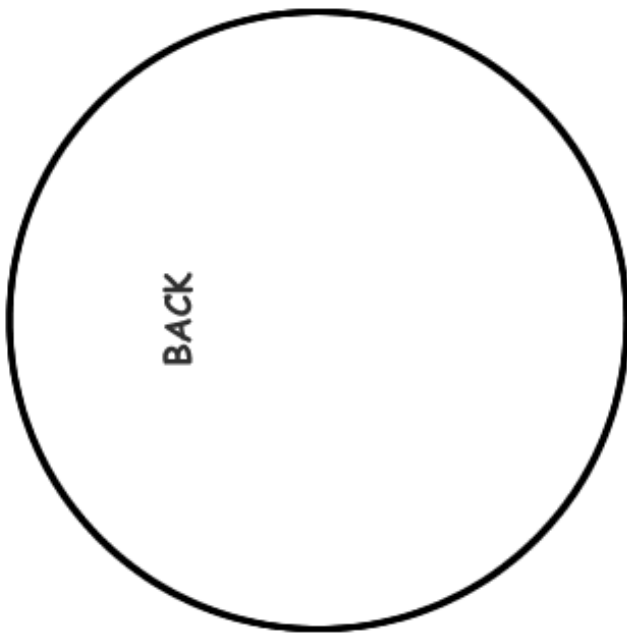
The left wall of the house is blank, and there is a small rectangular chimney on the left side.

The graphic organizer is shaped like a house with a gabled roof. The left side of the house has a single gable labeled "Effects on Sectionalism". The right side has a larger gable labeled "Effects on Women" with three horizontal lines for notes. Below the roofline, the house is divided into two rectangular sections. The left section is empty with five horizontal lines. The right section is labeled "Effects on the Cities" and also has five horizontal lines. A small rectangular box is attached to the left side of the lower-left section.

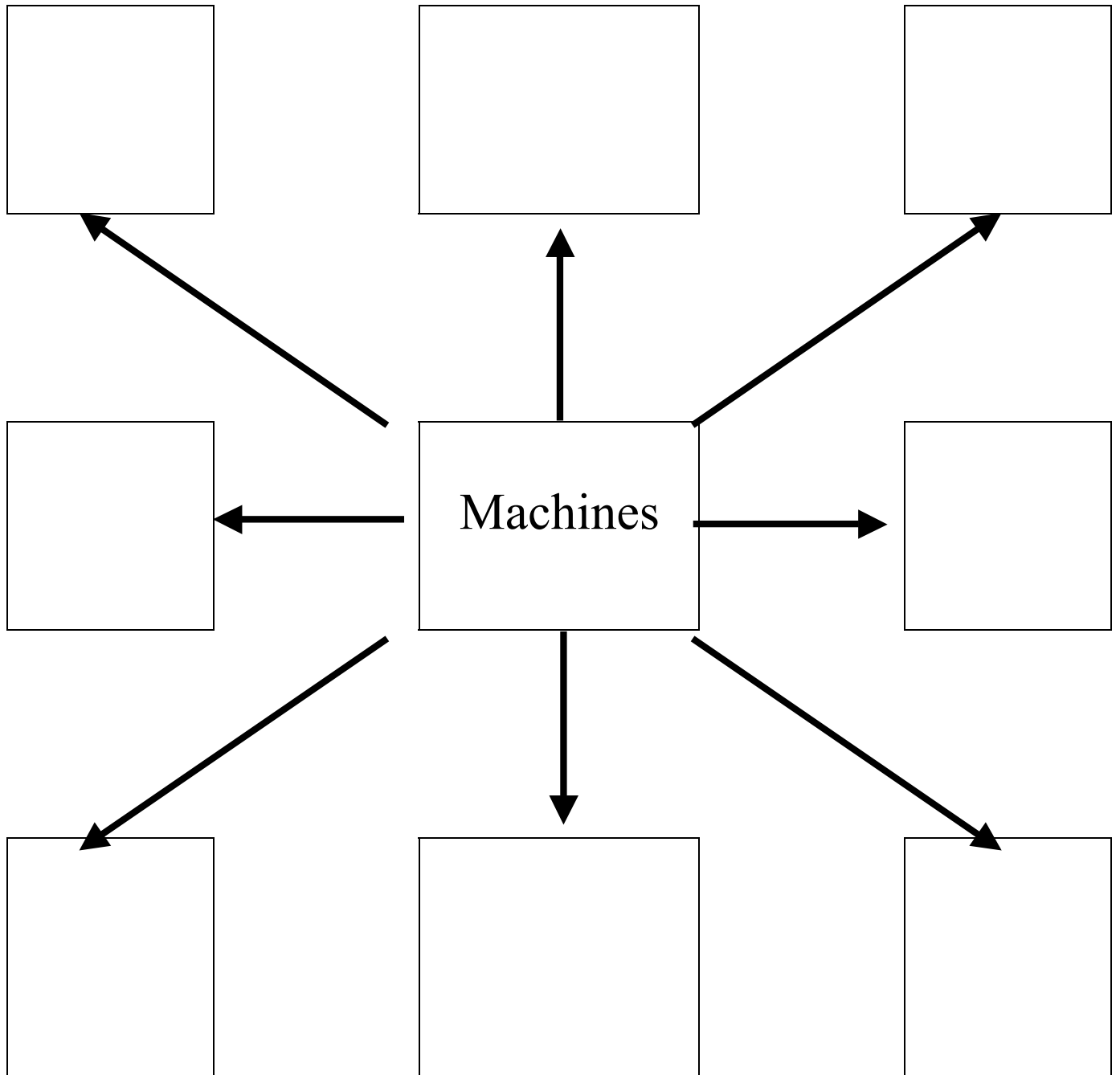
Effects on Sectionalism

Effects on Women

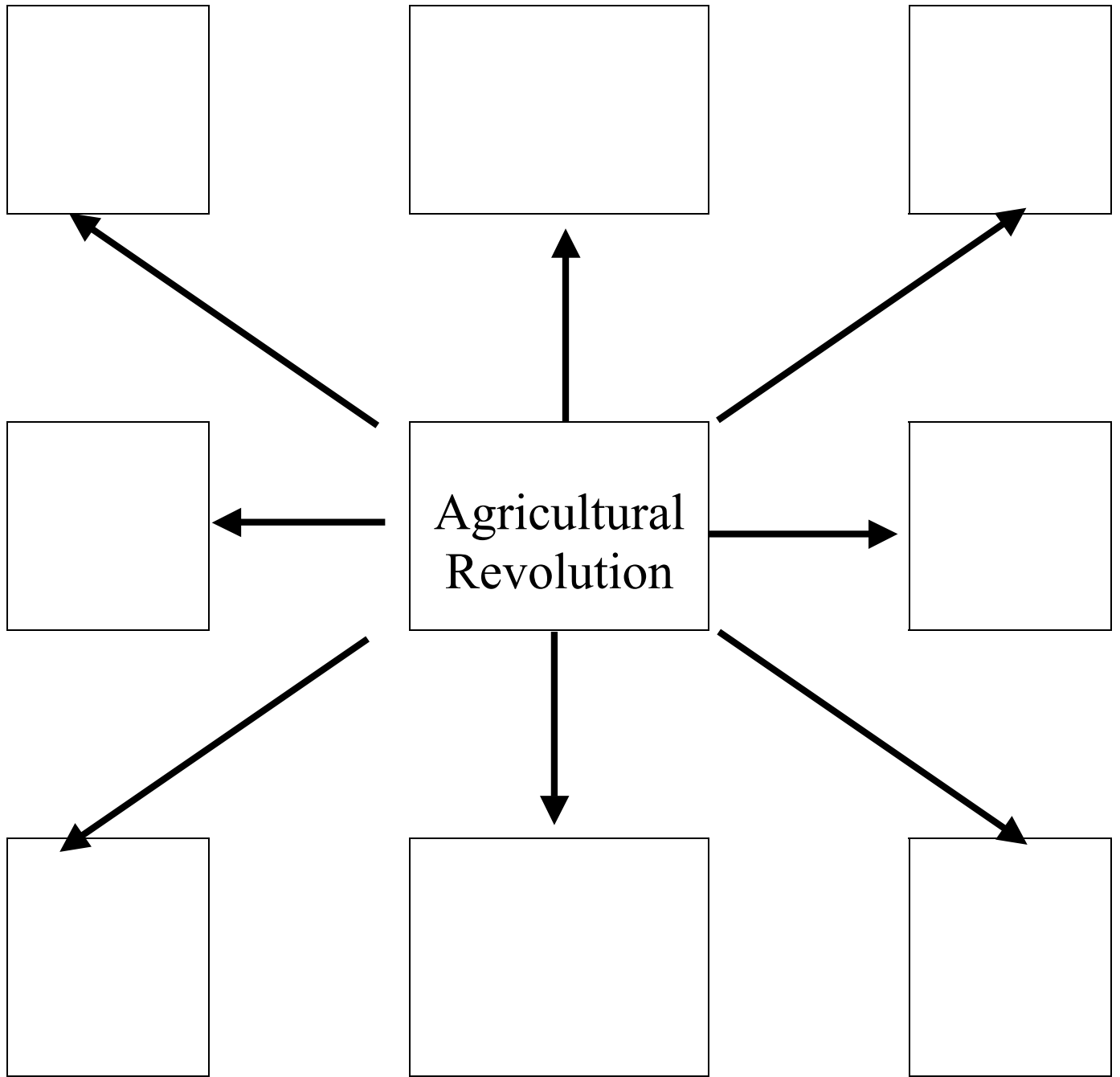
Effects on the Cities



APPENDIX B: WEBBING DIAGRAM -  
MACHINES



APPENDIX C: WEBBING DIAGRAM – AGRICULTURAL REVOLUTION

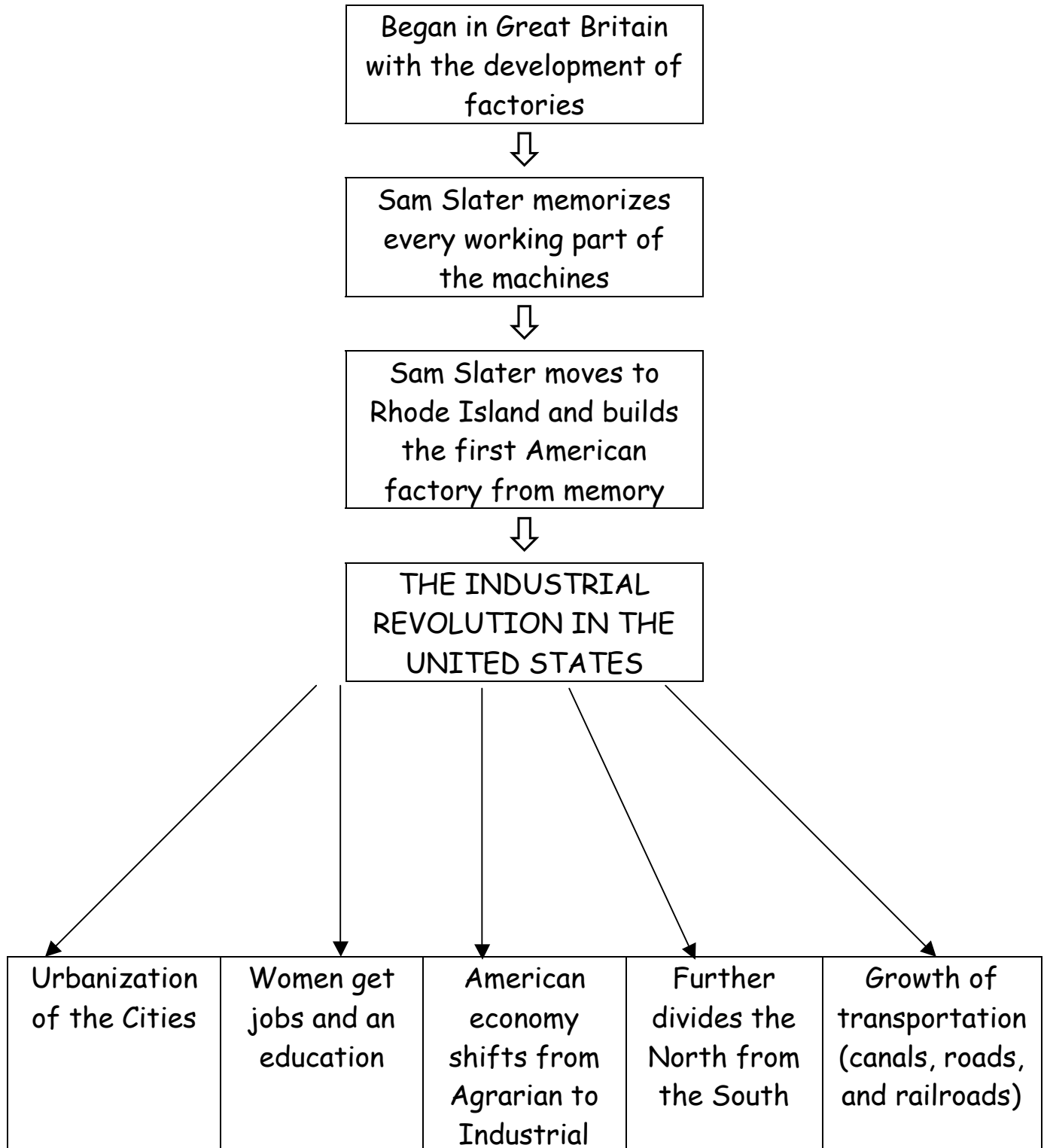


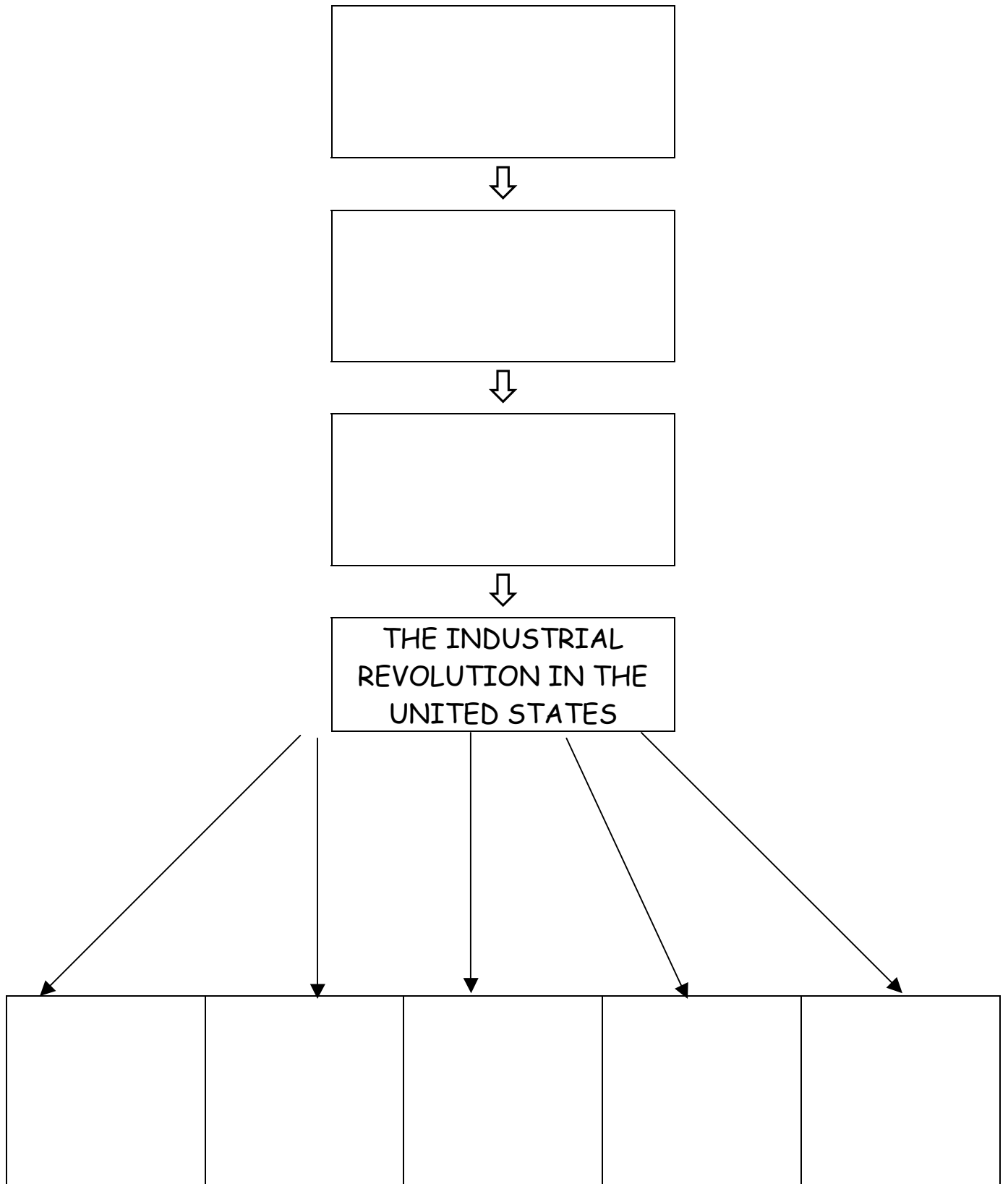
# Wake Up America!

<p>Where did the Industrial Revolution begin?</p>	
<p>What new machines made it easier to turn cotton into cloth?</p>	
<p>What new system combined machines with people?</p>	
<p>How did the Industrial Revolution come to America?</p>	

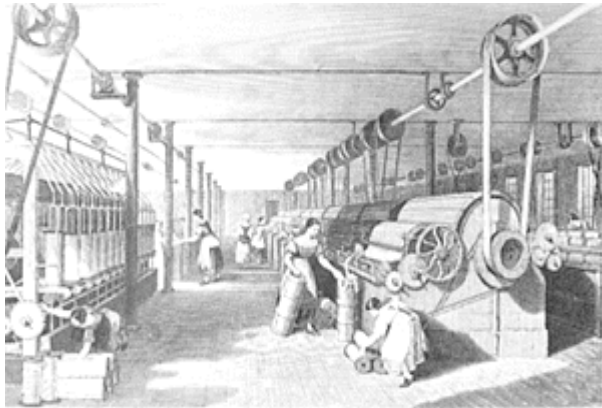
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APPENDIX E: CAUSAL CHAIN TO MULTIPLE EFFECTS



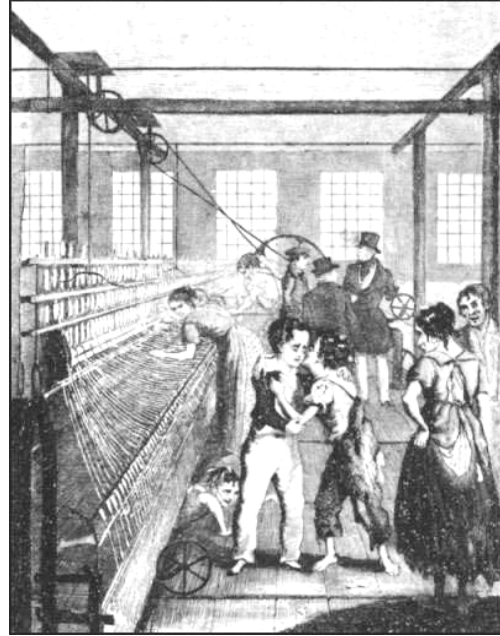


# Life in a Factory



[http://www.louisville.edu/provost/undergrad/elp/factory\\_scene.gif](http://www.louisville.edu/provost/undergrad/elp/factory_scene.gif)

1



<http://www.nettlesworth.durham.sch.uk/time/victorian/scavenger2.jpg>

2



<http://www.operationoutreach-econed.org/images/indrev.jpg>

3



<http://www.mtsu.edu/~kmiddlet/history/women/gif/wh-child-lq.gif>

4

# Life in a Factory

1	2
3	4

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