

The story of **America's Industrial Revolution** is an epic tale, full of heroes and heroines, villains and vagabonds, accomplishments and failures, sweated toil and elegant mechanisms, grand visions and unintended consequences. How did the United States evolve from a group of 18th century agricultural colonies clustered along the eastern seaboard into the world's greatest industrial power? Why did this nation become the seedbed of so many important 19th century inventions and the birthplace of assembly-line mass production in the early 20th century? Who contributed? Who benefited? Who was left behind?

At The Henry Ford in Dearborn, Michigan, school teachers from across the country explored this story with university scholars and museum curators during two week-long teacher workshops supported by the National Endowment for the Humanities.

Workshop participants spent mornings discussing their passion for American history with distinguished university professors, mid-days on field trips to more than a dozen historic farms, mills and laboratories, and afternoons planning activities for their students. They developed methods for incorporating various senses and learning styles into new lesson plans that bring **America's Industrial Revolution** out of the books and into living history. This booklet contains samples of those lesson plans.

In Education,



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Director of Education, The Henry Ford
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2009 Participants for *America's Industrial Revolution* at The Henry Ford

June Workshop Participants



"One of the most rewarding professional development activities imaginable. I cannot thank you enough for all of your organizational trouble. Your work is influencing more lives than you know."

July Workshop Participants



"I just loved the workshop and hate to see it end! It gave me a better understanding of the Industrial Revolution and the people that played the major roles in it."

"Everyone/thing was great. This is my first NEH workshop and I can't wait to do another! This was a wonderful first experience!"

Lesson Plans provided by the 2009 *America's Industrial Revolution* at The Henry Ford Participants

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Workshop Staff and Scholar Bios



America's Greatest History Attraction

Elementary Lesson Plan 1

Matthew Christian, Selma F. Bartlett Elementary, Henderson, NV

Title of the Lesson: The Industrial Revolution: Key Players and Important Pieces

Grade Level: 5th grade

Overview: Students will first explore components of the Industrial Revolution through the (See, Think, Wonder) strategy. After evaluating images, students will review key individuals and important pieces that made the Industrial Revolution possible. Students will then be challenged to select an inventor (or individual that played a major role) and establish how they contributed to the Industrial Revolution.

Central Question: How did the Industrial Revolution shape how we see our world today? What did the inventors within the time period itself, do that changed work and labor conditions to overall improve societies?

Learning Objectives: Students will (Nevada State Standards):
H3.5.4 Explain how technologies in U.S. history changed the way people lived
H3.5.1 Describe ways individuals display social responsibility

Assessment Tools: Students will be evaluated first through informal observation and their participation with the in classroom discussion. Summatively students will be graded on the presentation they give, sharing their understanding of the inventors and individuals that played a significant role in the Industrial Revolution.

Key Concepts:

- 1) Industrialization
- 2) Mechanization
- 3) Labor
- 4) Social Responsibility

Evidence/ Sources: Students will have access to (but are not limited to):

- 1) PowerPoint Presentation (containing images from Henry Ford Primary Sources)
- 2) The Henry Ford Website (<http://www.hfmqv.org>) and additional online resources

- 3) School Library
- 4) Encyclopedias

Time Frame:

Lessons will be conducted over approximately 4 sessions:

- 1) See, Think, Wonder Activity
- 2) Teacher Instruction: Key Players of the Industrial Revolution
- 3) Students collect information on their selected Inventor
- 4) Students share their findings

Instructional Sequence: Day 1: Students will be led through the attached PowerPoint slide show. As each slide is presented, students will be asked to (See, Think, and Wonder). Students are first asked specifically what do they see in the picture, nothing deep, simply what do they see in the image. Next, students are asked to think about the image, what do they think the pictured item is used for, or was used for. Finally, students are asked to wonder, start a statement with (I wonder...) sharing their thoughts about the image being shown. Students will be lead through the images each time continuing through the steps.

Day 2: Students will be led through a brief discussion focusing on the key inventors and individuals that shaped the Industrial Revolution into what we recognize it as today. With each inventor/individual, students will be given only a basic background for each person, so they can then continue their own research.

Inventor options:

- 1) James Watt – Steam Engine
- 2) Eli Whitney – Cotton Gin
- 3) Samuel Morse – Telegraph
- 4) Thomas Edison – Phonograph/Light Bulb
- 5) Alexander Graham Bell – Telephone
- 6) Nikola Tesla – Electric Engine
- 7) Wilber and Orville Wright - Airplane
- 8) Henry Ford – Model T/Assembly Line

Day 3: Students will be given the opportunity to research any inventor given, or any other individual that played a central role in the Industrial Revolution. Students focus will be on what the individual's role in the Revolution, more specifically what was the social impact of their contribution.

Day 4: Students will be given the opportunity to share out their findings. Each student or group of students will share the information they gathered on their individual, sharing with the whole class the information.

Student Project Ideas: Students will have the option to pursue further information outside the classroom setting, also having time in the school library. However, students will be given adequate in class time to complete their assignments.

Anticipated Challenges: Students will probably find difficulty in attaining what they see as adequate resources to establish talking points for their information. The teacher will help alleviate those problems by providing primary sources along with websites that provide easy locations to research their ideas. Additionally, it is likely students will struggle with some of the vocabulary they will encounter when reviewing their resources.

This is primarily resolved by the first PowerPoint discussion, where the teacher will frontload key vocabulary students will likely encounter, making the text more accessible to them.

Curriculum Links: See student objectives.



America's Greatest History Attraction

Elementary Lesson Plan 2

Beth Fortino, Miller Elementary, New Boston, MI

- Lesson Title:** Tool Detectives on Daggett Farm
- Grade Level:** 5th Grade (or review lesson for 8th)
- Overview:** In this lesson, students will explore colonial tools, review economic concepts, and look at gender roles on a New England Colonial Farm. Students will complete this task by studying colonial artifacts and completing an on-line module to better understand Colonial America in the New England region.
- Central Question:** How did the colonists divide labor among men, women, and children on a New England Colonial Farm?
- Objectives:** Students will be able to describe the daily life of New England colonists living on a farm.
- Students will be able to describe life in colonial New England from the point of view of children, men, and women.
- Standards:** 5-U2.3.2 Describe the daily like of people living in **New England**, Middle, and Southern Colonies (National Geography Standards 14 and 15)
5-U2.3.3 Describe colonial life in America from the perspectives of 3 different groups of people. (National Geography Standard 6)
- Anticipated Challenges:** Students will have a clearer understanding of Daggett farm if they have visited Greenfield Village. If students are able to visit the village, have each group chaperone use a digital camera to take photos of artifacts while on the Daggett Farm. Students will then complete the chart when they return or while on the trip by interviewing village staff for answers. In the afternoon, students can take photos of tools that replaced these tools during the Industrial Revolution as an extension activity is time permits. The website portion of this lesson could be completed as an introductory activity or a review activity.

Students may need to review the economic vocabulary learned in fourth grade of Capital Resources, Natural Resources, and Human Resources.

If your school does not have a computer lab, these activities could be done in centers by combining these activities with textbook reading, a video, or an additional article or activity.

Evidence/Sources: Attachment of artifact worksheet

Henry Ford On-line Module about Daggett Farm
<http://www.thehenryford.org/exhibits/smartfun/colonial/intro/intro.html#acct>

Further Study of Colonial Tools with detailed written information along with a few photographs
http://www.davistownmuseum.org/PDFsforInventory/WebMarritime1_PDF.pdf

Assessment: Students will correct their prediction sheets after studying Daggett Farm.

The teacher will review their on-line module worksheet in a discussion after the class has completed the activity. Students who do not meet the teacher's expectation will redo the on-line module during additional computer time or at home if possible.

Have students complete a journal entry. Pretend you are a colonial man, woman, or child on the Daggett Farm..... Describe what your life is like in your journal entry. Your entry should include 3 specific places or artifacts mentioned in the on-line module. Details should be added that show what you are feeling and what your daily life is like on a New England Farm during colonial times. See attached rubric.

Instructional Sequence: Anticipatory Set:

Ask student what tools they use to do work at school and at home. Divide those tools into people that help them do the work (human capital) and tools (capital equipment).

Activity One: Artifact worksheet. Tell students they are going to be working as historians today as they study photographs of tools used at a farm in colonial New England. As they work in groups (3-5 students), they will discuss who would have used this tool (human capital) and what work would have been completed with the tool. After students have discussed and worked for 10-15 min. Either give them the correct answers or have students (early finishers) search the Davistown Museum Website for possible answers. See teacher answer sheet for correct answers.

As students share their answers ask students why they made the prediction they did. What prior knowledge did they use? Explain your thinking.....

Activity Two: All of the tools analyzed in the first activity were photographs taken at Daggett Farm at Greenfield Village. Now we are going to take a closer look at Daggett Farm by analyzing additional primary sources while we complete an on-line activity. As you complete the activity, fill-out the worksheet because we will be discussing it today or tomorrow after the module is complete.

Extension:

Compare the ingenuity of Colonial America to that of the Industrial Revolution by watching these video clips or by exploring Greenfield Village and taking photos of tools that replaced those used on Daggett Farm.

<http://havefunwithhistory.com/HistorySubjects/ScienceInvention.html>

Find tools that could have replaced the colonial tools on the Daggett Farm during the Industrial Revolution.

http://www.davistownmuseum.org/PDFsforInventory/WebVclRother_PDF.pdf

Continue to compare the New England Region with the Middle Colonies Region and the Southern Colonies Region throughout your unit of study if teaching fifth grade.

Name _____

A New England Life: Mid 1700's

<http://www.thehenryford.org/exhibits/smartfun/colonial/intro/map.html>

Go to the website above. Follow the directions on the website. Your goal is to answer all seven questions correctly, solve the picture puzzle, and then pick-up your diploma. Warning: some of the video clips only have pictures (no audio), other video clips only have audio (no video). Read carefully and take notes below.

Introduction

Where was the Daggett Farm located?

Where did the Daggett Family practice their religion?

Question 1... What work did Samuel Daggett do to earn a living?

Question 2..... What was home life like for Anna Daggett and the Daggett children, Asenath, Tabitha, and Isaiah?

Question 3..... Who lived in the Daggett family's community?

Question 4..... When did people in the community get together and what did they do?

Question 5.... How did the Daggett family get the goods they needed for their work and home?

Question 6..... How did the Daggett family find out news from the community, the Connecticut colony and the world?

Question 7..... How did the Daggetts and their neighbors travel?

What was wrong with the picture?

What was wrong with the picture?

Name: key

Answer Sheet

A New England Life: Mid 1700's

<http://www.thehenryford.org/exhibits/smartfun/colonial/intro/map.html>

Go to the website above. Follow the directions on the website. Your goal is to answer all seven questions correctly, solve the picture puzzle, and then pick-up your diploma. Warning: some of the video clips only have pictures (no audio), other video clips only have audio (no video). Read carefully and take notes below.

Where was the Daggett Farm located? Northeast Connecticut

Where did the Daggett Family practice their religion? First Congregational Church of Andover

Answers should include some to the information listed below each question.

Question 1...What work did Samuel Daggett do to earn a living?

Daggett grew many different crops and raised several types of animals on his farm, for his family's use or to sell or trade for other things the family needed. From his account book, we know that Samuel Daggett grew wheat, corn, barley, oats and tobacco; made cider from the apples in his orchard; and raised cattle, sheep, pigs and chickens.

Like other farmers, Samuel Daggett also had additional sources of income. His main occupation was a "housewright"--meaning that he built houses. Daggett probably built his own house in the early 1750s, around the time he married his wife Anna. He also made chairs, spinning wheels and even coffins! And, from his account book, we also find that he pulled aching teeth for his neighbors, a skill he learned from his father.

Question 2.....What was home life like for Anna Daggett and the Daggett children, Asenath, Tabitha, and Isaiah?

On farms in the colonial era, each family member played an important role in producing food, clothing and household goods for the family.

Anna Daggett ran the home and cared for the family. Anna prepared and preserved food; spun yarn; made clothing, towels and sheets; gave the children their earliest lessons in reading and writing; and fed animals like chickens and pigs.

The Daggett daughters, Asenath and Tabitha, learned the skills of "housewifery" from their mother. They prepared yarn by carding and spinning; made clothing, soap and candles; tended the garden; and prepared food. The son, Isaiah, helped his mother and

sisters with some of the chores around the house, and learned farming and other skills from his father.

Question 3.....Who lived in the Daggett family's community?

Like Samuel Daggett, many of the men in the community both farmed and did other types of work. For example, Aaron Phelps ran a gristmill in addition to farming.

Many people in this Connecticut community came from families whose ancestors had immigrated to the American colonies from England. There were also about 100 enslaved African Americans in the community, including Jenne, who lived with the Reverend Lockwood and his wife. And, it is likely that Native Americans also lived here, laboring on nearby farms or in larger towns--often for low pay.

Not everyone in the community lived in the same circumstances. Widow Rebeckah Gibbs, for example, faced many challenges in running the farm and household on her own after her husband died. Although some people had the opportunity to establish their own farms and businesses, others--like the enslaved Jenne--found their freedoms and opportunities very limited.

Question 4...When did people in the community get together and what did they do?

People saw each other most frequently at church on Sundays, which allowed them to socialize as well as attend religious services. People also got together to help one another with building a house, spinning yarn or harvesting crops. Sometimes just men or just women got together with each other, but most gatherings included some element of fun. These events helped build a sense of community.

New England colonists sometimes held a day of thanksgiving, but Christmas was not celebrated. In keeping with their beliefs, New England Congregationalists did not celebrate religious holy days.

Question 5.....How did the Daggett family get the goods they needed for their work and home?

No farm family could make everything for themselves. They traded for or purchased goods they needed or special things they wanted. They could obtain some of these things from local craftspeople, like coopers (who made items like washtubs and barrels) and blacksmiths (who made items like kitchen utensils and door hinges).

Question 6.....How did the Daggett family find out news from the community, the Connecticut colony and the world?

Most often they heard news from their neighbors. If they wanted to get a copy of the latest newspaper or needed to pick up mail, the Daggetts had to travel about 20 miles to the larger town of Hartford.

How did news from far away get to the colonists? News from the outside world arrived with ships that anchored in colonial ports. This news, as well as the more local news, was printed in the growing number of newspapers published in larger colonial towns. Information that needed to be shared quickly might be printed on broadsides--cheaply printed sheets of news or advertising--that were distributed or posted around town. People also shared news by writing to their friends and families within the colonies or in England.

But news rarely traveled quickly. When the British government repealed the Stamp Act--a much-hated tax placed upon the colonies in 1765--the news took almost two months to reach the American colonists

Question 7.....How did the Daggetts and their neighbors travel?

They walked to visit their neighbors or to attend church. Farmers also used horses or oxen for transportation. Sometimes they might rent them from a neighbor if they didn't have their own. When traveling alone, a farmer might ride on horseback, but if he was transporting goods he might use a pair of oxen pulling a cart.

The Reverend Lockwood and his wife owned a 2-wheel chaise, a stylish horse-drawn vehicle that was an unusual sight in rural areas.


Where they existed, roads were stony, muddy and frequently zigzagged to their destination. One major road did pass through the community. Called the "Middle Post Road" it led east to Boston and west to Hartford. Travel for the most part was slow because weather was unpredictable and horses often needed a rest.



What was wrong with the picture?

Answers may vary

Name:

Capital Equipment: Artifact	Human Capital (Circle One)	Prediction and Why	Correct Answer	Industrial Replacmnt
	<p>Men</p> <p>Women</p> <p>Childre n</p>			
	<p>Men</p> <p>Women</p> <p>Childre n</p>			
	<p>Men</p> <p>Women</p> <p>Childre n</p>			
	<p>Men</p> <p>Women</p> <p>Childre n</p>			

	Men			
	Women			
	Children			

Capital Equipment: Artifact	Human Capital(Circle One)	Prediction and Why	Correct Answer	Industrial Replacem ent
	Men Women Children			
	Men Women Children			

Name: KEY

Capital Equipment: Artifact	Human Capital (Circle One)	Prediction and Why	Correct Answer	Industrial Replacement
Carpenter's Vice	<p>Men</p> <p>Women</p> <p>Children</p>		<p>The carpenter's vice is a tool that the men would use to hold wood steady so they could work on whittling it down. The vice held the wood or furniture in place so it wouldn't move. An apprentice would do this job if there was one around.</p>	
Carding Comes	<p>Men</p> <p>Women</p> <p>Children</p>		<p>This device was used by children both young boys and girls to card wool so it could be used to spin into thread for woolen clothes.</p>	

Children's Yolk	Men Women Children		This device was used by boys to carry water to and from the well. A similar device was used for animals as well.	
Baby Minder	Men Women Children		The baby minder was a tool that mother's used to place their children so they could get some work done.	
Kindling Box	Men Women Children		The kindling box was where boys collected wood for the fire.	

Capital Equipment: Artifact	Human Capital(Circle One)	Prediction and Why	Correct Answer	Industrial Replac ement
Spinning Wheel	Men Women Children		The spinning wheel was used to spin wool into yarn	
Pelch	Men Women Children		The pelch was used to pull the kettle in and lift the lid up so the food could be stirred.	

Journal: A Day in the Life of.....

Teacher Name: **National Endowment for the Humanities**

Student Name: _____

CATEGORY	4 - Above Standards	3 - Meets Standards	2 - Approaching Standards	1 - Below Standards	Score
Support for Position	Includes 3 or more pieces of evidence (facts or examples) that describe the colonial time period and colonist's life.	Includes 2 or more pieces of evidence (facts or examples) that describe the colonial time period and colonist's life	Includes 1 piece of evidence (facts or examples) that describe the colonial time period and colonist's life.	Begins to show evidence, but does not succeed.	
Evidence and Examples	All of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence relates to the colonial time period.	Most of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence relates to the colonial time period.	At least one of the pieces of evidence and examples is relevant and has an explanation that shows how that piece of evidence relates to the colonial time period.	Evidence and examples are NOT relevant AND/OR are not explained.	
Voice	The character has a strong voice filled with personality by showing how he/she feels about life in the colonial times.	The character has a voice filled with personality by showing how he/she feels about life in the colonial times.	The character begins to show a voice, but needs more examples.	The character created does not show enough evidence of having a voice.	

Sentence Structure	All sentences are well-constructed with varied structure.	Most sentences are well-constructed and there is some varied sentence structure in the essay.	Most sentences are well constructed, but there is no variation in structure.	Most sentences are not well-constructed or varied.	
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America's Greatest History Attraction

Elementary Lesson Plan 3

Beth Hanna, Pattengill Elementary School, Berkley, MI

Title of Lesson:	How Did They Get Here?: Industrialization of Transportation to Michigan
Grade Level:	3 rd
Overview:	Students will use primary and secondary sources to explore how people traveled to Michigan in the 1800s. They will compare the different types of transportation used at that time, considering the questions that historians ask. Based on the given sources and discussions they will examine why people moved to Michigan (push/pull).
Learning Objectives:	Students will: Explore the different types of primary source documents that an historian can use when researching the past. Use secondary sources to help form opinions and ideas about the time period. Write a journal entry of a fictional pioneer based on the documents.
Time Frame:	Three 45 minute lessons
Materials:	Primary sources pertaining to wagon/stagecoach travel, railroads and waterways Secondary sources pertaining to wagon/stagecoach travel, railroads and waterways Charts
Procedures:	Day 1: Question to Contemplate: How do people move from place to place? Record answer on post-it note and place on observation wall.

Distribute copies of primary sources to each table for students to examine for 10-15 minutes.

Students discuss with their tablemates what they notice about each artifact and then record ideas on the Primary Source Chart.

Discuss as a class what they learned about transportation during the 1800s from the primary sources.

Record questions that are raised by the class about the time period based on the studied sources.

Day 1 resources:

- 1842 Michigan Southern Railroad Broadside
- Railroad and Steamboat Routes of Michigan
- Erie Canal Distances
- Erie Canal Fees
- Map of the Great Central Route
- New York and Erie Railroad
- Travelling on the Erie Canal
- Conestoga Wagon
- Steamboat Walk-in-the-Water
- "I Arrived in Detroit" 1827
- A Boy's Story of Pioneer Life in Michigan
- View of the Upper Village of Lockport
- Toledo Ann Arbor line 1878
- Early Michigan Railroad

Day 2:

Question to Contemplate: Why do people move to a new home?

Record answer on post-it note and place on observation wall.

Show video on the Erie Canal to the class. Students record what they notice about the types of transportation they observed in the video on Secondary Source Chart.

Distribute copies of secondary sources to each table for student to examine for 10-15 minutes.

Students discuss with their tablemates what they notice about each artifact and then record ideas on the Secondary Source Chart.

Discuss as a class what they learned about transportation during the 1800s from the secondary sources.

Record questions that are raised by the class about the time period based on the studied sources.

Day 2 Resources

The Erie Canal: A Journey Through Time
(video)

<http://www.epodunk.com/routes/erie-canal/index.html#>

The Mitten: Pioneer Life

<http://www.michiganhistorymagazine.com/kids/pdfs/mitten05.pdf>

The Mitten: Pioneer Life – teacher supplement

<http://www.michiganhistorymagazine.com/kids/pdfs/mittensupp05.pdf>

"**Pioneers Settling a State**". Michigan History for Kids. Spring 2004

<http://www.michiganhistorymagazine.com/kids/pdfs/mhksp04a.pdf>

<http://www.michiganhistorymagazine.com/kids/pdfs/mhksp04c.pdf>

The Amazing Impossible Erie Canal by Cheryl Harness

The Northwest Ordinance of 1787.

Cobblestone Magazine

A Pioneer Story by Barbara Greenwood

Pioneers Kids Discover

Settling in Michigan and other true pioneer stories retold by Lynne Deur

Day 3:

Review what the class learned about how people traveled during the 1800s. Discuss why people were moving from the east and south to Michigan in the 1800s (push/pull).

Each student will write a journal entry from a fictional pioneer's point of view. The following ideas must be included on the entry:

- Area or place that you (fictional pioneer) came from.
- Where you are going.
- How you are traveling there.
- Why are you going.
- Who you are traveling with.

Curriculum Links:

Michigan Grade Level Content Expectations- 3rd Grade:

3 - H3.0.1: Identify questions historians ask in examining the past in Michigan (e.g., What happened? When did it happen? Who was involved? How and why did it happen?).

3 - H3.0.2: Explain how historians use primary and secondary sources to answer questions about the past.

3 – H3.0.3: Describe the causal relationships between events in Michigan's past (e.g., Erie Canal, more people came, statehood).

3 - H3.0.7: Use a variety of primary and secondary sources to construct a historical narrative about daily life in the early settlements of Michigan (pre-statehood).

Primary Source Chart

Resource	What You Noticed	What Does This Tell You

1842.

SEASON ARRANGEMENTS.

**MICHIGAN
SOUTHERN RAILROAD,
FROM MONROE TO ADRIAN.**

The most direct, expeditious and Safest Route.

The public are respectfully notified that the SOUTHERN RAILROAD is now in complete operation from Monroe to Adrian; and being well furnished with Locomotives, Passenger and Freight Cars, will transport Freight and Passengers safer, cheaper and more expeditiously than any other road in competition.

This road was built by the State of Michigan, at an expense of

Four hundred thousand dollars
and in its construction is not surpassed by any in the United States.

PASSENGERS

Going to Illinois, Indiana, Wisconsin, Iowa and Western, Southern, or Central parts of Michigan, will perceive, by referring to the Map, that no Public thoroughfare is so direct for them as the

SOUTHERN RAILROAD.

Great care is taken in keeping this Road in good repair, thereby avoiding accidents similar to those occurring upon other roads almost daily, jeopardising "life and limb."

STEAMBOATS

Are running from MONROE TO BUFFALO in connection with the Cars upon this Road.

STAGES, CARRIAGES, WAGONS, ETC.

Are always in attendance to convey Goods and Passengers to any direction from Adrian.

Passengers passing over this Road will be met at the boats by Railroad Cars, and conveyed to the Depot, and from the Depot to the Boats without charge.

Cars leave Monroe daily for Adrian, Sundays excepted, at 8 o'clock A. M. and leave Adrian for Monroe at 2 o'clock P. M. Running time 2½ hours.

The public may rely upon statements here made, and their patronage is respectfully solicited.

J. H. CLEVELAND,

July, 1842. Superintendent S. R. R.

Rob't D. Foy, Printer, 159 Main st., Buffalo.

The Railway Agent and Station Agent 1889

Railroad and Steamboat Routes of Michigan



Doggett's railroad guide & gazetteer 1848

Erie Canal Fees

A TABLE

Showing the Toll per Barrel of Flour; the Toll per 100 lbs. on all property paying 4 mills per 1000 lbs. per mile; and the Toll per 100 lbs. on Merchandise, and all property paying 5, and 3 mills per 1000 lbs. per mile, any distance from 1 to 100 miles.

BY T. BUCHANAN, Jr., ACCOUNTANT.

MILLS.		TOLL.	
1	2	100	200
1	2	100	200
3	4	300	400
5	6	500	600
7	8	700	800
9	10	900	1000
11	12	1100	1200
13	14	1300	1400
15	16	1500	1600
17	18	1700	1800
19	20	1900	2000
21	22	2100	2200
23	24	2300	2400
25	26	2500	2600
27	28	2700	2800
29	30	2900	3000
31	32	3100	3200
33	34	3300	3400
35	36	3500	3600
37	38	3700	3800
39	40	3900	4000
41	42	4100	4200
43	44	4300	4400
45	46	4500	4600
47	48	4700	4800
49	50	4900	5000
51	52	5100	5200
53	54	5300	5400
55	56	5500	5600
57	58	5700	5800
59	60	5900	6000
61	62	6100	6200
63	64	6300	6400
65	66	6500	6600
67	68	6700	6800
69	70	6900	7000
71	72	7100	7200
73	74	7300	7400
75	76	7500	7600
77	78	7700	7800
79	80	7900	8000
81	82	8100	8200
83	84	8300	8400
85	86	8500	8600
87	88	8700	8800
89	90	8900	9000
91	92	9100	9200
93	94	9300	9400
95	96	9500	9600
97	98	9700	9800
99	100	9900	10000

[Revised from the Table of the year 1861, by T. Buchanan, Jr., in the Clerk's Office of the Board of Canal Commissioners, for the Session held in 1862.]

www.eriecanal.org



memory.loc.gov

New York & Erie Railroad

Aug. 1859

NEW YORK & ERIE RAILROAD.

The **GREAT DOUBLE TRACK**, and
ONLY

BROAD GUAGE  **RAILROAD.**

RUNNING WEST.

THROUGH TICKETS AT REDUCED RATES!

FROM BOSTON
To Dunkirk, Buffalo, Niagara Falls, Detroit, Cleve-
land, Columbus, Cincinnati, Louisville, Lexington,
CHICAGO, ST. LOUIS, BURLINGTON, DAVENPORT, ROCK ISLAND,
ST. PAUL, MILWAUKIE;

Kansas Gold Mines,
Cairo, Memphis, Natchez, New Orleans, and all Intermediate
Places, and to all the Principal Cities and Towns in the

WEST & SOUTHWEST!

BOSTON OFFICE,
 **15**
 **STATE STREET.**

For Safety and Comfort, this Great Double Track and Broad Guage Railway is unsurpassed by any Competing Road, and is undeniably the very best Run, and best equipped in the United States.

The Best Ventilated and Most Splendid New **SLEEPING CARS** with all the Modern Improvements, are on this Road.

Trains Leave Boston,
5:30 P. M., Via Stonington, Fall River and Norwich.
8:30 A. M., and 3 P. M., Via Worcester and Springfield Road.

TICKETS VIA THIS ROUTE, obtained at our several Offices and Agencies in New England, and at the
General Ticket Office, No. 15 State Street, Boston,
Where CORRECT Information may be obtained about the West, and of the different Railroads.

HENRY R. HALL,
CHARLES MORAN, President. General Agent New York & Erie R. R.

Farwells & Forrest, Steam Job Printers, 5 Lindall Street, Boston.

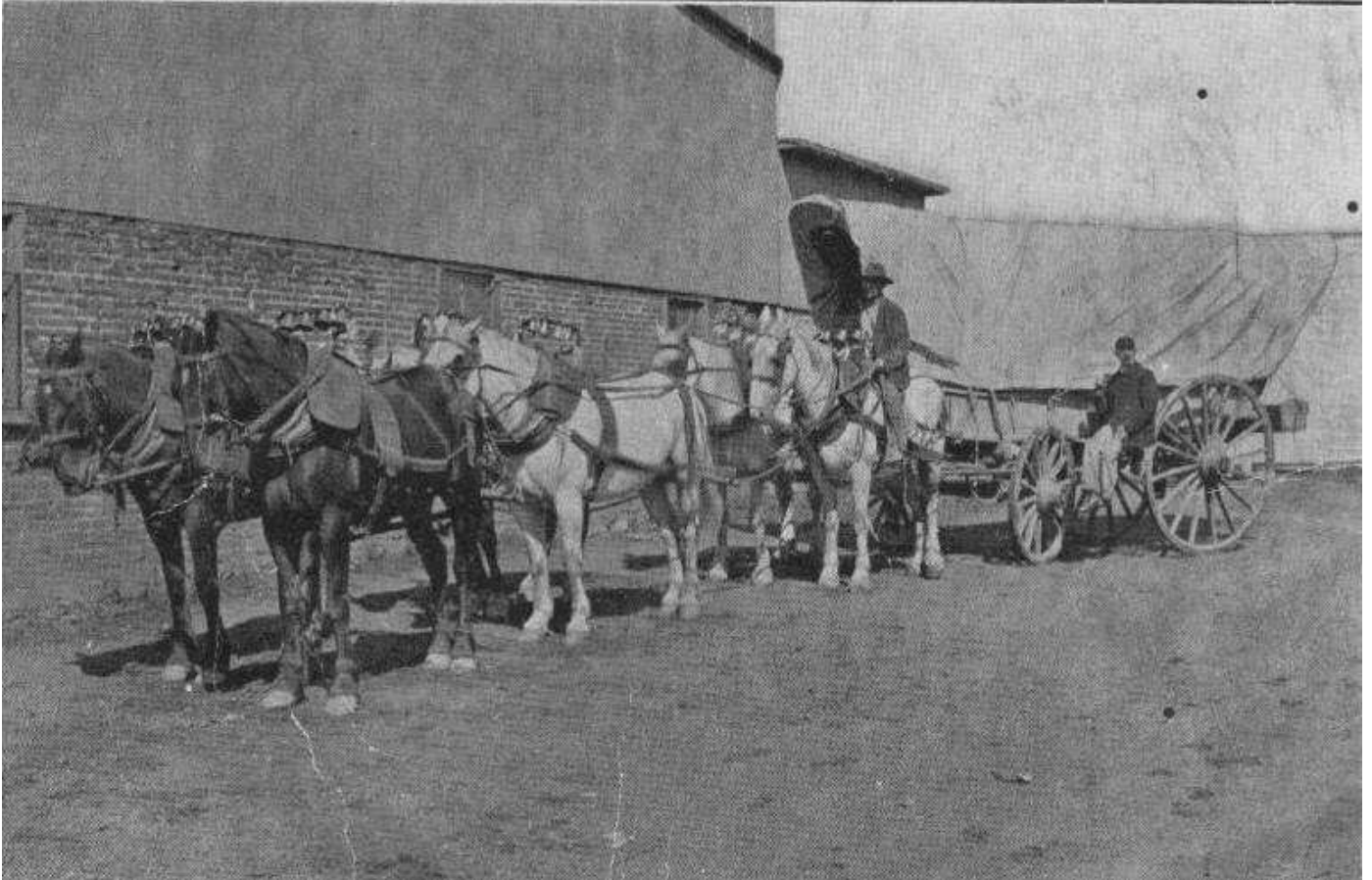
Farwells & Forrest, Steam Job printers [1856]



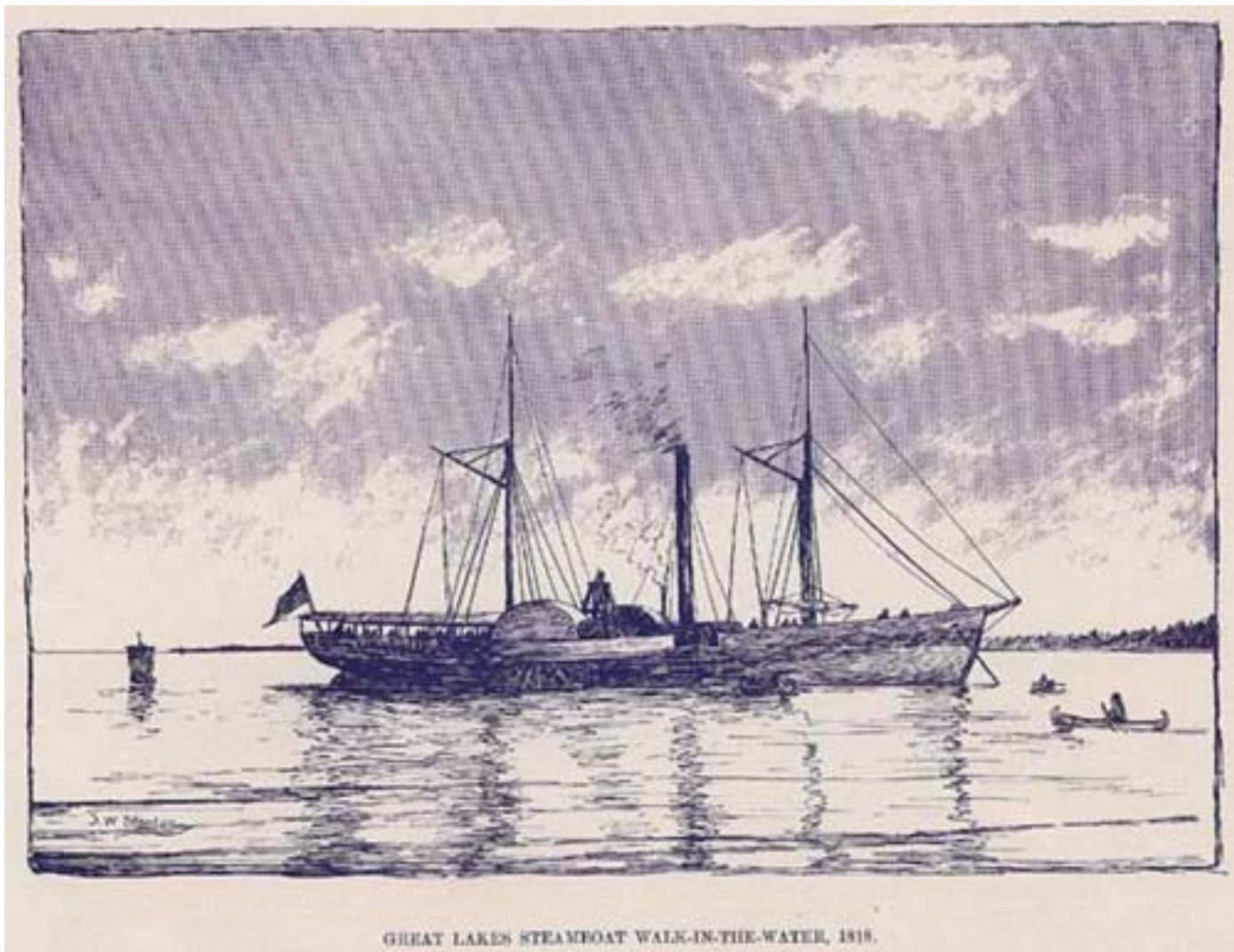
"Travelling on the Erie Canal" by H. Inman -- from: *The Northern Traveller and Northern Tour*. New ed. published by J. & J. Harper, 1831. (4 3/8 in. x 2 5/8 in.) -- Reproduction available from The Farmer's Museum, Cooperstown, NY.

<http://www.eriecanal.org/general-1.html>

Conestoga Wagon



THE CONESTOGA AREA HISTORICAL SOCIETY



<http://springcitychronicle.com>

"I Arrived at Detroit..."

1827

Friend Palmer. Early Days in Detroit

*Friend Palmer [1820-1906] came to Detroit as a child in 1827. In 1906 he wrote a book of personal reminiscences about his life in Detroit: *Early Days in Detroit: Papers Written by General Friend Palmer of Detroit: Being his Personal Reminiscences of Important Events and Descriptions of the City for over Eighty Years.* (Detroit: Hunt & June, 1906)*

*[Wayne County Historical and Pioneer Society. *Chronography of Notable Events in the History of the Northwest Territory and Wayne County.* Compiled and arranged by Fred. Carlisle. Detroit: O.S. Gurley, Bornman & Co., 1890. Pp. 125-126.]*

I came to Detroit in May, 1827, with my mother and two sisters, on the steamer "Henry Clay." We were under the friendly guidance of Mr. Felix Hinchman (father of Guy Hinchman), who took charge of us at Canandaigua, N. Y. My father, Friend Palmer, had proceeded us some two or three months, on account of urgent business matters connected with the firm of F. & T. Palmer, of Detroit, of which he was the senior partner.

Our trip through New York from Canandaigua to Buffalo was by stage and very rough, the roads having been rendered almost impassable by recent rains. It took us, I think, two days and two nights to reach Buffalo. We had to wait at that point two or three days for the steamboat "Henry Clay". We did not mind in the least, for we were quartered at the Old Eagle Hotel, kept by Benjamin Rathbun, a most sumptuous resting place, I thought it, and so it was for those days. Our trip up the lake to Detroit on the "Henry Clay" was uneventful. We had a pleasant passage that occupied, I think, two or three days. The "Henry Clay," commanded by Captain Norton, was a floating palace, we thought, and we greatly enjoyed the time spent on it. The Henry Clay had no cabin on the upper deck - they were all below. When you desired to retire for the night or for meals, or get out of the reach of rain and storms, downstairs or between decks you had to go.

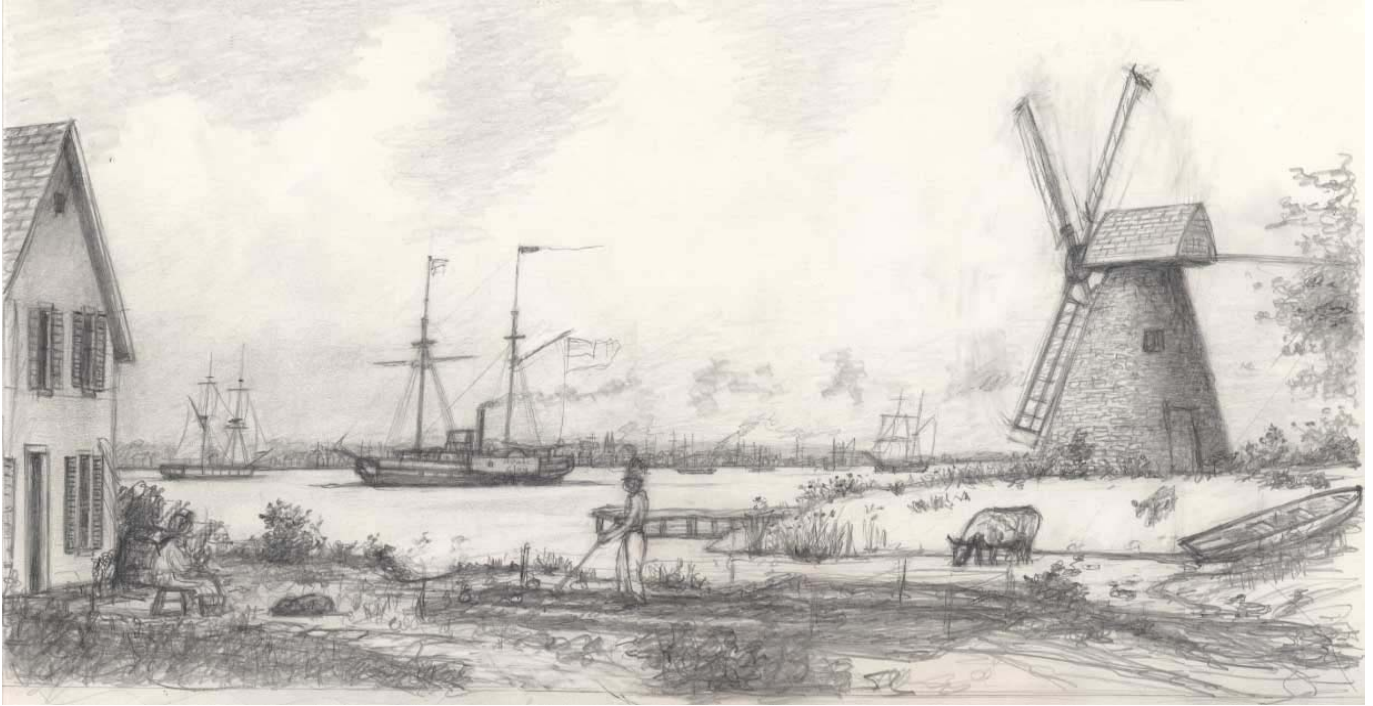
The "Henry Clay" was one of the three steamers that composed the line from Buffalo to Detroit, viz: "Henry Clay," "Superior" and "Niagara." It was the only regular line between the above points. Now and then the steamers "William Penn" and "William Peacock" would put in an appearance. We could only count upon about one boat a week. The mails came by these boats during the season of navigation and the balance of the year by land through Ohio.

We landed at Jones' dock, between Griswold and Shelby streets, on a fine day, about ten o'clock in the morning and all walked up to the residence of my uncle, Thomas Palmer, corner of Jefferson Avenue and Griswold Street. There were no public conveyances in those days. Thomas Palmer lived over his store, as did many of the merchants doing business here at that time.

Let me refer once more to Captain Norton, one of the most conspicuous and popular captains on the lakes at that early day. The "Henry Clay" was a crack steamer and, of course, must have a corresponding chief officer. Of commanding presence, Captain Norton, of the "fastest steamboat 'Henry Clay,'" when he appeared on Jefferson avenue, clad in his blue swallowtail coat with brass buttons, nankeen pants and vest, and low shoes with white stockings, not forgetting the ruffled shirt and tall hat, was the observed of all observers. Steamboat captains were kings in those days. All were pleased and anxious to show them every attention. When the "Clay" rounded Sandwich point, Detroit lay before us and, though small, the city presented quite an attractive appearance. The most conspicuous object in the distance was the steeple or cupola of the statehouse or territorial capitol building, that pushed its head up among the surrounding trees, its tin covering glittering in the morning sun. This statehouse was located, where is now Capitol Square, and where the remains of Michigan's first governor, Stevens T. Mason, now repose.

The windmills along the river also attracted our wondering attention. Three were located on the Canadian side of the river, one on the point opposite the residence of the late Joseph Taylor and two just above the present site of Walkerville. The one on the American side was on the small point where Knagg's creek then entered the river and opposite the old Knagg's homestead, Hubbard's farm (since destroyed).

The four mills presented to us a wonderful sight on that bright May morning. They were in full operation; their four immense arms, covered with white sailcloth, were whirled through the air by the force of the wind, and, as said before, filled us with delighted amazement as all the New York state could not produce a scene to match it.



<http://masseymarineart.com>

A Boy's Story of Pioneer Life in Michigan
By: Theodore E. Potter

I was born in Saline, Washtenaw County, Michigan, March 10, 1832. My early life was spent like that of other boys in the territory about that time. My father and mother, with two small children, came to Michigan in the spring of 1830 from Cayuga county, New York, by way of the Erie canal to Buffalo, and from there by steamboat to Detroit within seven day's time. They then walked to Plymouth, thirty miles, in two days, carrying their two children in their arms, stopping a few days with relatives there, then walked to Saline, a distance of twenty miles further, where they first settled, and my father built one of the first frame houses in that part of the country, one story high, and located on the present village plat. In this house he not only lived, but worked at tailoring, a trade he had learned when a boy at Huntington, PA, where he was born in 1798.

Clarke Historical Library
Michigan Pioneer and Historical Collections, 1907

View of the Upper Village of Lockport, Niagara County, New York



Lithograph by J. H. Bufford after W. Wilson, 1836

Courtesy of the Library of Congress

EVERYBODY REJOICE

HANG OUT YOUR BANNERS!

THE LINE ON THE TOLEDO & ANN ARBOR

RAILROAD!

WILL BE LAID INTO ANN ARBOR

TO-DAY!

MAY 16, 1878,

Citizens will meet at the Opera House at 3 o'clock P. M., today, and accompany the Band to South Main street, and there meet the tracklayers. After short speeches by **HENRY C. WALDRON** and **HON. JOHN L. BURLEIGH**, a counter-march will be made to the Opera House, where a **SUPPER** will be provided for all.

Let every one turn out and lend a helping hand to furnish the men a good square meal.

BY ORDER OF COMMITTEE.

W. H. H. F. P. N. Y.

Early Michigan Railroad



A horse-drawn rail car from 1829

The first steam locomotive arrived in Michigan on the E&K in 1837



info.detnews.com/

Secondary Source Chart

Resources	What Did You Notice	What Does This Tell You



America's Greatest History Attraction

Elementary Lesson Plan 4

Sally Meyer, Crabapple Lane Elementary School, Peachtree City, GA
American Innovators:
Henry Ford and Thomas Edison



Source: <http://www.nps.gov/archive/edis/graphics/ford-tae.jpg>

Title of Lesson: American Innovators: Henry Ford and Thomas Edison

Grade Level: 5th

Overview: This unit is designed to allow gifted fifth-grade students the opportunity to explore the lives of two remarkable American innovators, Henry Ford and Thomas Edison. After hearing a brief biography of each personality, students will create a timeline of their lives, compare them using a Venn diagram, and then do more extensive research on one of them. Using that research, students will create a memorial to the individual they have chosen and present their project to classmates.

Instructional Sequence

Introduce the topic; students brainstorm



Read Henry Ford's biography; students take notes



Read Thomas Edison's biography; students take notes



Compare/Contrast Henry Ford and Thomas Edison

- Timeline
- Venn diagram
- Writing



Student Research and Projects



Presentations

Established Goals (standards)

Georgia Gifted Benchmarks:

5.2 Students will develop and practice creative thinking and creative problem-solving skills.

- The student will be able to forge possible options for compromise between divergent positions.
- The student will be able to evaluate solutions (results) and identify the most elegant.

5.3 Students will develop and practice critical thinking and logical problem-solving skills.

- The student will be able to defend strategies used to solve problems and identify the most elegant solution.
- The student will be able to explain the interconnected relationships of real-world problems and possible solutions in terms of economic, sociological, environmental, and political issues.

5.4 Student will develop advanced communication skills.

- The student will be able to organize elements of a task and promote engagement of peers to accomplish a desired result.

5.5 Students develop an understanding of self.

- The students will be able to demonstrate recognition of their responsibilities as a result of their membership in a community.

Georgia Performance Standards

Social Studies

SS5H3 The student will describe how life changed in America at the turn of the century.

- b. Describe the impact on American life of ...Thomas Edison (electricity).

SS5H4 The student will describe U.S. involvement in World War I and post-World War I America.

- b. Describe the cultural developments and individual contributions in the 1920s of.....the automobile (Henry Ford)...

SS5E1 The student will use the basic economic concepts of trade, opportunity cost, specialization, voluntary exchange, productivity, and price incentives to illustrate historical events.

- f. Give examples of technological advancements and their impact on business productivity during the development of the United States.

SS5E2 The student will describe the functions of the three major institutions in the U.S. economy in each era of United States history.

- a. Describe the private business function in producing goods and services.

What enduring understandings are desired?

Students will understand that...

- learning is driven by questions and a desire for knowledge
- risk and success go hand in hand
- hard work and success go hand in hand
- different people have different talents

What essential questions will be considered?

- What is Henry Ford’s legacy?
- What is Thomas Edison’s legacy?

What key knowledge and skills will students acquire as a result of this unit?

<p><i>Students will know...</i></p> <ul style="list-style-type: none">▪ The important events in the life of Henry Ford▪ The important events in the life of Thomas Edison▪ The impact of the innovations of Henry Ford and Thomas Edison on life in the 19th century and beyond	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none">▪ Create a timeline of the important events in the life of Henry Ford▪ Create a timeline of the important events in the life of Thomas Edison▪ Research and analyze the innovations of Henry Ford and Thomas Edison▪ Compare and contrast the character traits and personal interests of Henry Ford and Thomas Edison▪ Create a memorial to either Henry Ford or Thomas Edison
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Who was Henry Ford?

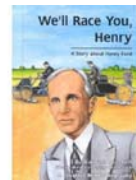
Vocabulary: innovator, innovation, invention, mobility, Model T, assembly line

Lesson Questions:

- What is an innovation? An innovator?
- What is the difference between an innovation and an invention?
- Why do we remember Henry Ford?
- What is the Model T, and how did it change America?
- What is the assembly line? How has it impacted production?

Activities

- Begin the lesson by brainstorming what students know about Henry Ford.
- Discuss the meaning of innovations.
 - How are innovations different from inventions, or are they the same thing?
 - What do you think provides the impetus for an innovation?
 - Is an innovator the same as an inventor?
 - Can a person who improves someone else's invention be considered an innovator?
- Read the book, *We'll Race You Henry: A Story about Henry Ford* by Barbara Mitchell. Instruct students to take notes on the Henry Ford note taking sheet. Provide instruction about what an *important* event is, if necessary. For example, who he married is not the reason we remember him, but improving the assembly line is.
- As you read, discuss the events in the story. At the end, ask students to share their choices for important events, character traits, challenges faced, and what they liked best about Henry Ford.
- Share primary source documents, such as Ford's patent for the "motor carriage" and pictures of the Model T and the assembly line.
- Spend an extended amount of time on:
 - the assembly line: how its implementation changed the efficiency of modern factories, the mind numbing tasks workers were expected to complete, how it is now an integral component of almost every type of production around the world, etc.
 - the Model T: how it made America mobile, creating the need for highways, motels, and fast food



Formative Assessment

- Teacher observation
- Class discussion
- Note taking sheet

Summative Assessment

- Memorial project

Resources:

- *We'll Race You Henry: A Story about Henry Ford* by Barbara Mitchell
- Notes worksheet

Primary Source Documents

- Patent number 686,046 (Motor Carriage)
- Photos of the assembly line, Model T, and Henry Ford

Henry Ford

Date of Birth _____ Date of Death

Famous for

Important events in Henry Ford's life (include year or age):

1.

2.

3.

4.

5.

What challenges did Henry Ford overcome?

What character traits did Henry Ford exhibit? Explain your choice.

What do you like best about Henry Ford? Explain your choice.

Henry Ford



the Henry Ford



Old 16

In 1908, Old 16, the Locomobile race car, won the prestigious Vanderbilt Cup. Its victory marked the first time an American car won an international auto race and served notice to the rest of the world that America was poised to change the auto industry forever.

Made: 1906

ID: 97.9.1

Photo ID: G981

15 Millionth Ford Model T Touring Car

This was the last car of the Model 'T' series. After completing this car, the Ford Motor Company began preparations to build the new Model 'A'. The 4-cylinder, 22.5hp, 5-passenger touring car is marked with Engine No. 15,000,000.

Made: 1927

ID: 00.136.124





Ford Model T Truck
Hauling 8,000 Pounds of Hay



McDonald's Sign
Standing 26 feet high, this neon-illuminated sign was installed in August of 1960 at the second McDonald's franchise in the state of Michigan. It reads, "Licensee of the MCDONALD'S Speedee Service System -- HAMBURGERS Over Million Sold."

Made: 1960
ID: 86.137.1

Source <http://www.thehenryford.org/museum/automobile.aspx>:

No. 686,046.

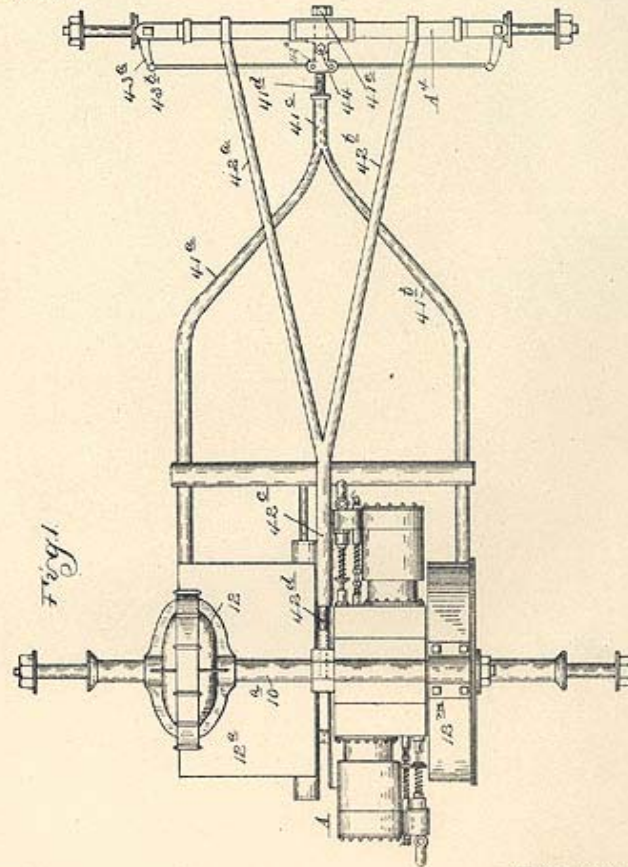
Patented Nov. 5, 1901.

H. FORD.
MOTOR CARRIAGE.

(Application filed Sept. 19, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
R. C. Smith
Attest

Inventor
Henry Ford
By *W. B. Woodworth*
Attys

U.S. Patent No. 686,046 on the Motor-Carriage granted to Henry Ford and the Detroit
Automobile Company, 11/5/1901

Source: www.fi.edu/learn/case-files/ford/full/01_11_0...

Who Was Thomas Edison?

Vocabulary: incandescent, perseverance,

Lesson Questions:

- What is an innovation? An innovator?
- What is the difference between an innovation and an invention?
- Why do we remember Thomas Edison?
- What important inventions did Thomas Edison develop?
- What is the incandescent light bulb, and how did it change America?

Activities

- Begin the lesson by brainstorming what students know about Thomas Edison.
- Review the meaning of innovations and inventions.
 - How are innovations different from inventions, or are they the same thing?
 - What do you think provides the impetus for an innovation?
 - Is an innovator the same as an inventor?
 - Can a person who improves someone else's invention be considered an innovator?
- Instruct students to list the five materials things they could not live without and set it aside.
- Read the book, *Inventing the Future: A Photobiography of Thomas Edison* by Marfe Ferguson Delano. Instruct students to take notes on the Thomas Edison note taking sheet. Review what an *important* event is, if necessary. For example, that he nicknamed his children Dot and Dash is not the reason we remember him, but the light bulb is.
- As you read, discuss the events in the story. At the end, ask students to share their choices for important events, character traits, challenges faced, and what they liked best about Thomas Edison. Discuss/debate results. Ask students if they think Edison is an innovator, an inventor, or both. With a partner, have students discuss how Edison could have developed ideas for 1093 patents.
- Share primary source documents, such as Edison's patent for the light bulb, his quotes about work ethic, and photos of him sleeping on a table. Discuss.
- Instruct students to review the list of items they could not live without. Discuss how many of them are the result of Thomas Edison's inventions. For example,
 - MP3 player-sound recording. You can listen to an original recording of Thomas Edison at the National Park website.
<http://www.nps.gov/edis/photosmultimedia/the-recording-archives.htm>
 - Movies-the light bulb, movie camera, and recorded sound.



Formative Assessment

- Teacher observation
- Class discussion
- Note taking sheet

Summative Assessment

- Memorial

Resources

- *Inventing the Future: A Photobiography of Thomas Edison* by Marfe Ferguson Delano
- Notes worksheet

Technology/Primary Source Documents

- Copies of Edison's patents for the phonograph and light bulb
- Photographs of Edison at work and sleeping
- Photographs of Edison's inventions

Thomas Edison

Date of Birth _____ Date of Death

Famous for

Important events in Thomas Edison's life (include year or age):

1.

2.

3.

4.

5.

What challenges did Thomas Edison overcome?

What character traits did Thomas Edison exhibit? Explain your choice.

What do you like best about Thomas Edison? Explain your choice.



To the Honorable Commissioner of Patents:

Your Petitioner *Thomas A. Edison*
of Menlo Park in the State of New Jersey
prays that **LETTERS PATENT** may be granted to him

for the invention of an Improvement in Electric Lamps
and in the method of manufacturing the same
(Case No. 186.)
set forth in the annexed specification.

And further prays that you will recognize LEMUEL W. SERRELL, of
the City of New York, N. Y., as his Attorney, with full power
of substitution and revocation, to prosecute this application, to make altera-
tions and amendments therein, to receive the Patent, and to transact all
business in the Patent Office connected therewith.

1879

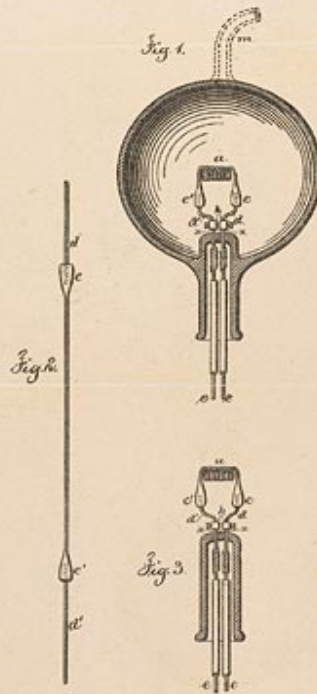
T. A. E.

Source: www.ourdocuments.gov

T. A. EDISON.
Electric-Lamp.

No. 223,898.

Patented Jan. 27, 1880.



Witnesses
Chas. H. Smith
Wm. P. Mackay

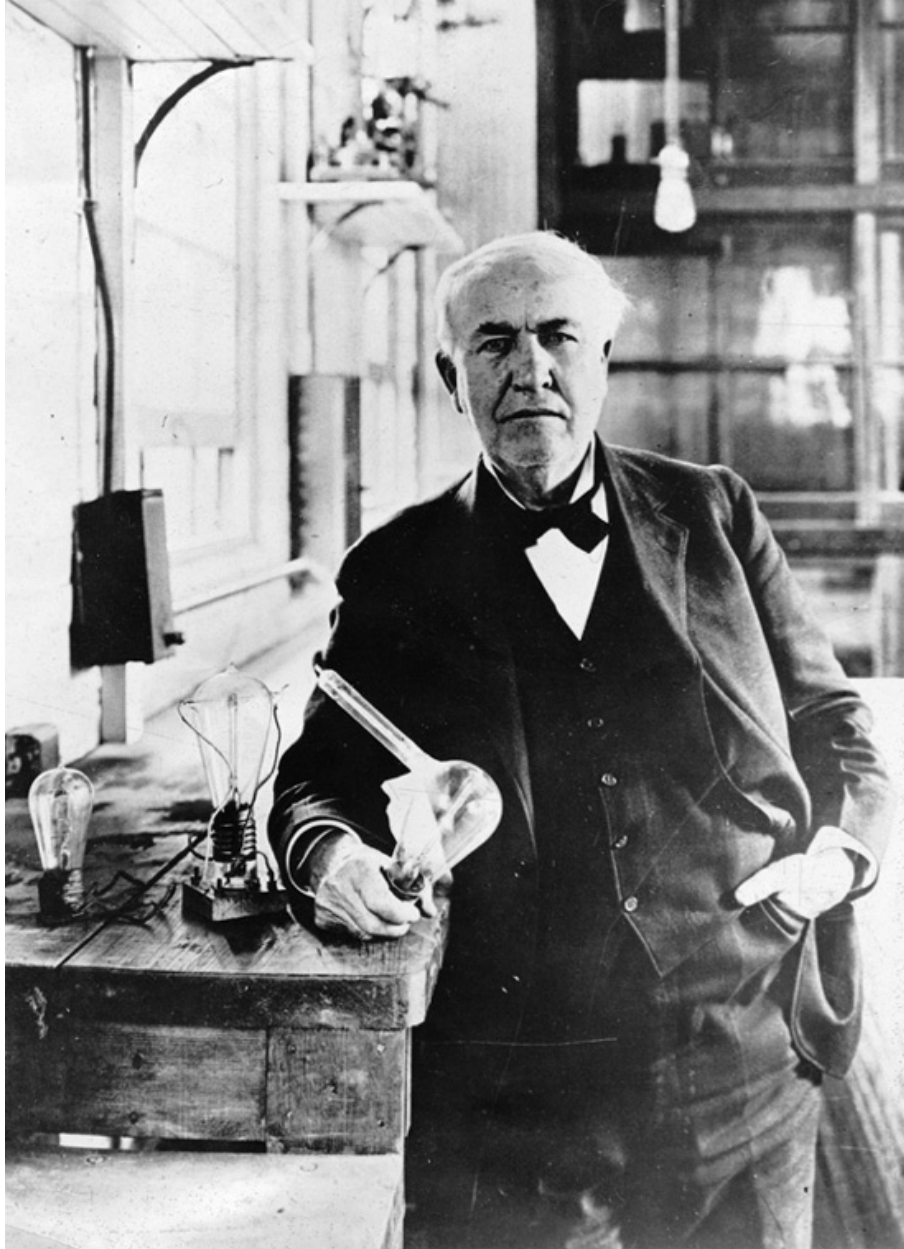
Inventor
Thomas A. Edison
for Lemuel W. Ferrell

cut

THE HENRY FORD CO. PHOTOGRAPHY DEPARTMENT, D. C.

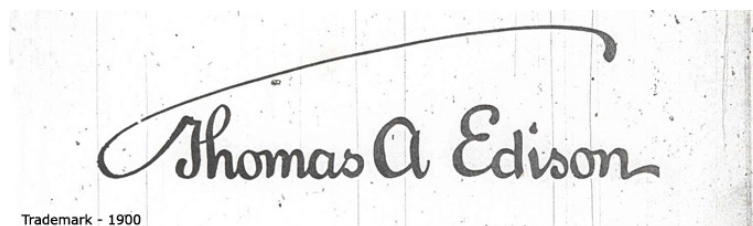
Thomas Edison's Electric Lamp Patent Drawing

Record Group 241
Records of the Patent and Trademark Office
National Archives and Records Administration
ARC Identifier: [302053](https://www.ourdocuments.gov/doc/302053)
Source: www.ourdocuments.gov



Source:

http://www.archives.gov/exhibits/american_originals_iv/images/thomas_edison/thomas_edison.jpg



Comparing and Contrasting Henry Ford and Thomas Edison

Vocabulary:

Lesson Questions:

- How were Henry Ford and Thomas Edison alike?
- How were Henry Ford and Thomas Edison different?
- What do you think they talked about when they spent time together?

Activities:

- Provide students with white construction paper (18x24). Instruct them to fold the paper in half lengthwise. Working in groups, students will use their notes to create a timeline of Thomas Edison's life on one half of the paper. On the other half of the paper, they will create a timeline for Henry Ford's life. The class will discuss similarities and differences they note in the lives of the two men.
- Provide students with a blank Venn diagram (or instruct them to create one). Working alone, students will add details about Ford and Edison to the two circles, and add things they have in common to the middle. These can be events or experiences they shared (i.e., camping, the 50-year anniversary of the light bulb) or character traits, like perseverance and curiosity.
- The class will discuss results.
- Finally, the class will discuss the following questions:
 - Were Henry Ford and Thomas Edison innovators or inventors?
 - Which one do you think was more important to our history?
 - Why do you think they were friends?
 - What do you think they talked about when they were together?
- This portion of the unit will conclude with students writing a persuasive paper about this prompt:
 - Who created the biggest change in American life, Henry Ford or Thomas Edison?

Formative Assessment

- Teacher observation
- Class discussion
- Venn diagram
- Timeline
- Writing

Summative Assessment

- Memorial

Resources: Venn diagram, white construction paper (18x24)



Thomas Edison inspects electric car in 1914. He and Henry Ford had planned to use Edison's nickel iron battery to power clean, efficient, affordable cars for the masses that would be recharged by home wind turbines, according to author Edwin Black in 'Internal Combustion'.

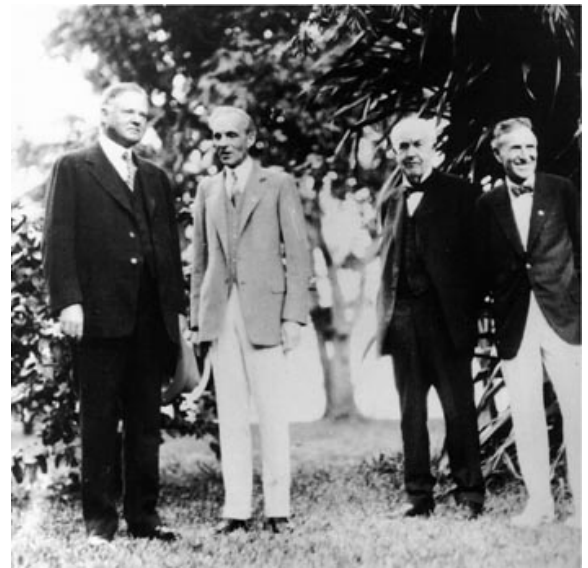
Source:

www.evworld.com/images/edison_ev1914.jpg

President Herbert Hoover, Henry Ford, Thomas Edison, and Harvey Firestone at Edison's 82nd birthday. Ft. Myers, Florida, February 11, 1929. Credit: Herbert Hoover Library

http://teachpol.tcnj.edu/amer_pol_hist/thumbnail341.htm

!



Camping with Thomas Edison, Henry Ford, and Harvey Firestone

Source:

www.dnr.state.md.us/feature_stories/00000141.jpg



Research and Project

Vocabulary: memorial, commemorate, expectations

Lesson Questions:

- How should we remember Henry Ford and Thomas Edison?

Activities

- Discuss why we would want to memorialize a person, such as Henry Ford or Thomas Edison. Explain the history and purpose of The Henry Ford Museum and Greenfield Village.
- Review/introduce possible ways to memorialize a person (flag, coin, monument, school, roads, statue, etc.)
- Explain project and expectations:
 - Students research and take notes on the life of either Thomas Edison or Henry Ford.
 - Students create a memorial that reflects the importance of Henry Ford or Thomas Edison.
- Students present projects to the class.

Formative Assessment

- Teacher observation
- Teacher/student conferences
- Notes

Summative Assessment

- Project

Resources:

Encyclopedias, biographies, non fiction books, approved internet sites, such as

www.nps.gov/edis

Poster boards, clay, markers, paint, etc.

American Innovators Final Project

The personality I have chosen is

Due Date:

Using the skills you have developed this year, you will research either Henry Ford or Thomas Edison, create a memorial to your choice, and present your work to the class.

Presentation

Your presentation must be 4-5 minutes long and address the following:

General Information

- Background information (childhood, school, early life, etc.)
- What were his/her important accomplishments?
- Why was Henry Ford or Thomas Edison influential?
- Which of his inventions/innovations do you think was the most important?

Character

- What challenges did he face?
- What character traits did he represent?
- Who were his friends?

Evaluation of your personality

- Who influenced him?
- Would he have been in the gifted program?
- Would you want to be a friend of Ford/Edison?
- Do you think he was an inventor or an innovator? You can only choose one.

Note: You should be able to tell, not read, about your personality on (date).

Visual

- Think about the impact this person has made on the world. Remember the many ways a person can be memorialized.
- Create an innovative memorial to either Thomas Edison or Henry Ford. There are no limitations, other than it must be your personal best.
- Your visual must include a commemorative “plaque” that provides a brief summary of his life.

We will be devoting at least one hour in class each week to research, but you will also need to do some of the work at home, especially during the initial research period.

I understand that my child has a research project due in Enrichment on (date).

Parent Signature

Self Assessment/Teacher Assessment Name _____

Scale: 4-Excellent (I would be proud to show the principal and my parents)

3-Good (Hard Work is evident, but there is room for improvement)

2-Fair (I can improve this in many ways to meet the objective)

1-Poor (I can't believe I turned this in)

0-Not Observed

	4	3	2	1
Background <ul style="list-style-type: none"> Major life events Accomplishments Why is this person influential? Most important innovation 	All topics covered in depth with examples	All topics covered, but not in depth OR Most topics covered in depth	Most topics covered or topics not covered in depth	Topics barely covered and/or no examples given
Character <ul style="list-style-type: none"> Challenges Friends Character Traits 	All topics covered in depth with examples	All topics covered, but not in depth OR Most topics covered in depth	All topics covered, but not in depth OR Most topics covered in depth	Topics barely covered and/or no examples given
Gifted Program? <ul style="list-style-type: none"> Qualifications (ability, achievement, creativity, motivation) 	Choice fully supported using all four qualifications and explained with examples	Decision partially explained (only some areas or no examples)	Decision made, but not fully explained in terms of qualifying areas	Decision stated, but not explained at all
Memorial <ul style="list-style-type: none"> Represents the character AND his accomplishments Is creative and innovative 	<ul style="list-style-type: none"> It is easy to see exactly who is being memorialized and why. Very innovative. 	<ul style="list-style-type: none"> The observer can tell who is being represented, but the memorial presents an incomplete picture. Innovative 	<ul style="list-style-type: none"> The memorial presents an incomplete picture. It is not innovative. 	<ul style="list-style-type: none"> Not clear who is being memorialized or what he accomplished Mundane presentation

Presentation <ul style="list-style-type: none"> • Told-did not read • Made Eye contact • 4-5 minutes 	Spoken confidently with frequent eye contact for 4-5 minutes	Spoken with eye contact most of the time for 4-5 minutes OR Spoken confidently with continuous eye contact for less than 4 minutes	Spoken with limited eye contact for 4-5 minutes OR Spoken with eye contact most of the time for less than 4 minutes	Read with limited eye contact for four minutes or less
Total Score				

Comments:



America's Greatest History Attraction

Elementary Lesson Plan 5

Lina Moukalled-Khadr, Miller Elementary School, Dearborn, MI

Title of Lesson:	Amber Waves of Grain
Grade Level:	4 th
Overview:	A 5 day social studies and language arts lesson plan; students will learn about the process of producing wheat in Michigan through a reading selection, pictures, and data.
Curriculum Links:	<p>Michigan Content Level Expectation:</p> <p>4.E1.0.1 Identify questions economists ask in examining the United States (e.g., what is produced? How is it produced? How much is produced? Who gets what is produced?)</p> <p>4.H3.0.5 Use visual data and informational text or primary accounts to compare a major Michigan economic activity today with that same related activity of the past</p> <p>R.WS.04.05 Acquire and identify strategies to identify unknown words or word parts...</p>
Materials:	<p>KWL chart Encyclopedia - dictionaries Internet Access if available Grains of wheat Michigan's counties map</p>
Procedures:	<p>If possible bring some dry wheat grains and have the students touch them and smell them. Give the students a KWL chart and have them record in the "K" column what they know about the grain.</p> <p>Tell the students that they are going to read a selection about the history of wheat and have them record under the "W" what they want to know about wheat.</p>

Divide the students into groups of four; assign each group a paragraph from the reading selections and tell each team that they are going to be experts in explaining their selection to the rest of students. Encourage them to look up the definitions of vocabulary in the dictionary or use the computer.

- Read the selections together and have the expert students explain to their peers any unclear parts. (Teacher should always interfere to enforce comprehension.)
- Divide the students into small groups and have the students summarize and record what they learned about wheat under the “L” column.
- Again, assign each group a paragraph and based on the information in it, have the students brainstorm the type of jobs that are required to accomplish the tasks discussed in the selection. The students may draw a picture of different careers that relate to farming
- Give the students a map of Michigan and have them locate and color the following 5 top counties that produce wheat: Sanilac, Huron, Lenawee, Tuscola, and Saginaw
- Post the wheat table information on a transparency and ask the students questions related to the information



The History of Wheat

Wheat is one of the world's most important food crops. It is believed that wild relatives of wheat first grew in the Middle East. Wheat was one of the first plants to be cultivated. It was grown about 11,000 years ago.

Enormous changes in people's lives occurred because of wheat being grown. People began growing their own food and no longer needed to wander in search of food. Permanent settlements were established because wheat provided people with a stable food supply. Soon people grew enough wheat to feed people from other lands. Once there was extra wheat available, trade between various cultures developed.

By 4,000 B.C. wheat farming had spread to Asia, Europe and North Africa. New [species](#) of wheat developed because early farmers probably selected kernels from their best wheat plants to use as seeds for planting the following year's crop. That way, only the best wheat qualities were passed from one generation to the next. Soon wheat became an important world wide crop.

How Wheat Farming Has Changed

Until the early 1800's, wheat was grown and [harvested](#) very similar to the ancient Egyptian way of farming. Farmers harvested wheat by hand with a [sickle](#). They tied the [stalks](#) into bundles to await the [threshing](#). Livestock trampled the stalks or farmers beat the stalks to loosen the grain from the stalks. The grain was tossed into the air, and the chaff blew away. This left only the kernels behind. This process was called [winnowing](#).

In 1834, Cyrus McCormick, an American inventor, [patented](#) a reaping machine. A threshing machine was also invented in 1834 by two brothers from Maine. The development of these machines allowed farmers to do the work that once took several days in only a few hours. Another advancement that helped in the production of wheat was the development of the steam engine in the 1880's and the [internal combustion engine](#) in the 1920's. Animals did not need to pull the farm equipment anymore. The use of machines allowed farmers to plant larger areas of wheat and harvest it in a shorter amount of time.



How Wheat Is Grown

Wheat grows in a variety of [climates](#) and [soil](#). Suitable weather and proper soil are needed to produce a healthy wheat crop. Wheat farmers must use high-quality seed that is free from disease to produce high yields. Farmers also must plant and [harvest](#) the wheat at the correct time. They must protect the growing crop from damage caused by disease and pests.

Wheat likes to be grown in fairly dry and mild climates. Weather conditions influence when wheat is planted. Winter wheat is planted from September to November. It is planted a few inches deep in narrow channels called furrows. Snow fills the furrows and protects the plants from the cold. Spring wheat is planted from early March to mid-April. It has a shorter growing period than winter wheat.

The steps for growing wheat are much the same throughout the world. However, wheat farms are different in size and levels of mechanization (work done by machinery). In many non-industrial countries, wheat farmers use animals to pull their plow across their fields. They also may plant and harvest their crop by hand. In industrialized countries, nearly all the wheat is grown on large farms and is harvested with the help of tractors and specialized machinery.

Wheat farmers prepare their fields by [plowing](#) the soil. This breaks up the surface of the soil and allows moisture to soak into the ground where it is stored for the next crop. Plowing the field also buries weeds that have grown in the damp soils.

A tractor-drawn machine called a drill is used to plant wheat seed. Long narrow channels (furrows) are dug by the drill. At the same time, it drops seeds into the furrows and covers them with soil. Fertilizer can also be dropped into the furrow along with the seed.

While the wheat is growing, farmers must protect it from diseases, insect pests, and weeds. Rust is the most destructive wheat disease. Rust is a fungus that grows on the wheat plant and produces small, rust-colored spots on the leaves and stems. Insects damage about ten percent of the United States wheat crop every year. Grasshoppers and locusts are two of the more than one hundred insects that attack wheat plants. Weeds rob the wheat plants of the moisture and nourishment they need.





Where Wheat Is Grown


More of the earth's surface is covered by wheat than any other food crop. The leading wheat producing countries are China, Russia, the United States, India, and Canada. The world's farmers grow enough wheat every year to fill a freight train stretching around the world two and one-half times.


In the United States, the two major types of wheat grown are spring wheat and winter wheat. Spring wheat is mainly grown in the northern Great Plains states such as North Dakota, South Dakota, Montana, and Minnesota. Winter wheat is grown from the southern Great Plains states (Nebraska, Kansas, and Oklahoma) through the Eastern United States (Missouri, Illinois, Indiana, Ohio, Michigan, Pennsylvania, Virginia, North Carolina, South Carolina and Georgia). California has also become a winter wheat producing state.

Harvesting and Marketing Wheat

 Because bad weather can damage the wheat crop, farmers use huge machines called combines to cut the [stalks](#) and separate the kernels from the rest of the plant.

 After the [harvest](#), most farmers haul their wheat in trucks to a country grain elevator for storage. The grain from each truck is emptied into a pit. A conveyer belt then picks up the grain, and carries it to the top of the elevator. The grain is then dumped into a tall storage bin. The grain is dried and cleaned. Workers give one of six grades to the wheat, based on its weight and its quality. Wheat is sold based on its grade.

 Wheat then travels by truck or railroad boxcar to an elevator located in a large grain market or shipping center. If the grain is to be exported, the United States Department of Agriculture inspects and grades it.

 Some wheat is then loaded onto ships for export. In other words, the wheat is sent to other countries. Trucks, railroad cars, or [barges](#) carry the remainder of the wheat to mills for grinding into flour. The rest is shipped off to other processors to be used in animal feed or other [industrial products](#). Some wheat is bought directly from farmers, or buyers may purchase wheat already in storage.

Plowing in the past...



...and in the present



Uses of Wheat



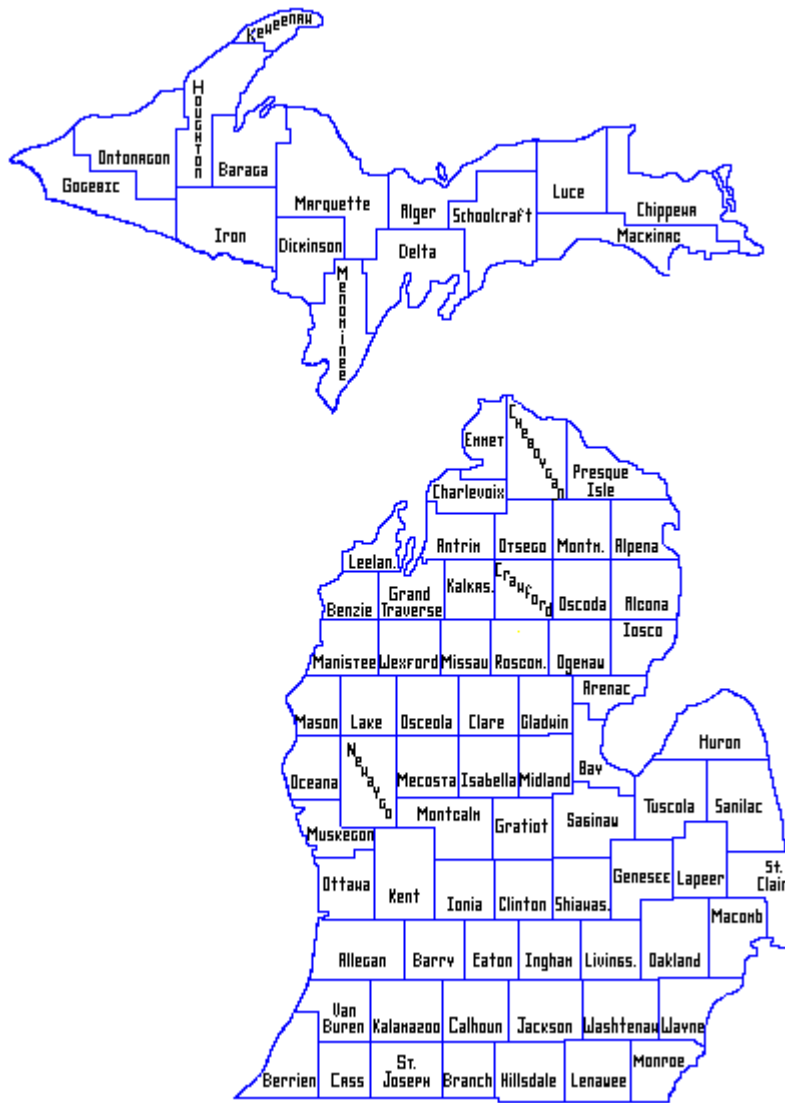
Foods made with wheat are a major part of the diet for over a third of the world's people. In fact, wheat can be found in some form at almost every meal. Breads, cookies, cakes, crackers, macaroni, spaghetti, and other forms of pasta are made from flour, which is ground up kernels of wheat.

Extended Activity:

If possible have the students visit The Daggett Farm, The Firestone Farm, and Loranger Gristmill at Greenfield Village, Dearborn, to have a better understanding of how wheat is processed.



Images from The Henry Ford



Wheat

Michigan's 2006 winter wheat crop totaled 47.45 million bushels, a 22 percent increase from 2005. Planted acres increased to 660,000 acres from 600,000 the previous year. Harvested acreage was up 10 percent from last year, at 650,000 acres. The average yield, at 73 bushels per acre, surpassed the previous record set in 2000. The value of the crop increased 32 percent to \$161 million. Sanilac, Huron, Lenawee, Tuscola, and Saginaw, were the top five counties in wheat production.

Winter wheat planting began on schedule and progressed faster than the five-year average. Emergence was ahead of normal. The crop over-wintered fairly well despite concerns of ice on a few fields. Warm temperatures and rainfall advanced crop growth,

pushing development well ahead of normal. Winter wheat continued to advance well with some reports of powdery mildew due to overly wet conditions. By the middle of June, heading was completed and flowering was nearly completed in many areas. Ninety-two percent of the crop was turning yellow by the first week of July, compared with a five-year average of 66 percent.

Harvest began the second week in July and concluded the second week in August. Fields were harvested with low incidence of disease. Some damage due to considerable rainfall was reported, but the crop remained in good to excellent condition.

Wheat: Acres, yield, production, and value, 2002-2006

Year	Planted	Harvested	Yield	Production	Price ¹	Value of production
	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>Bushels</i>	<i>1,000 bushels</i>	<i>Dollars</i>	<i>1,000 dollars</i>
2002	450	440	67	29,480	3.28	96,694
2003	680	660	68	44,880	3.25	145,860
2004	660	640	64	40,960	3.01	123,290
2005	600	590	66	38,940	3.13	121,882
2006	660	650	73	47,450	3.40	161,330

¹ Marketing year average.

References:

[Agriculture A Brief History](#). R. Douglas Hurt. Purdue University Press, West Lafayette, Indiana. 2002

<http://library.thinkquest.org/5443/wuses.html>

http://www.michaglabor.org/general_services/MI_STATS.pdf

Glossary:

barges - a long flat bottom boat used for carrying freight

granary - a place or building where grain is stored

industrial products - goods made in large quantities by people and machines that work together

internal combustion engine - a motor that gets its power from an explosion that happens inside the motor itself

patented - sole right to make, sell, or use a new invention

plow - plowing - to cut, lift and turn over the soil

sickle - a tool with a curved blade on a short handle used by the Egyptians to cut wheat

species - a group of related living things that have characteristics in common

stalks - the main stem of a plant

threshing - to separate the grain from the wheat

winnowing - to get rid of the chaff by blowing it with air



America's Greatest History Attraction

Elementary Lesson Plan 6

Mary Foulke, Gier Elementary School, Hillsdale, MI

Title of the Lesson/Activity:	Thomas Edison Jeopardy Game
Grade Level:	3rd Grade
Overview:	This activity will be used as a review at the end of our unit study of <i>Thomas Edison: His Life and Times</i>
Central Question:	How much do you know about Thomas Edison?
Learning Objectives:	Students will be able to answer problems using the questions format of a Jeopardy game.
Assessment Tools:	Teacher will observe the students as game is played. Further study and review may be required depending
Key Concepts:	This game will be used as a review tool after students have been introduced Thomas Edison, his life and his key inventions.
Evidence/ Sources:	Identify the evidence and resources that students will use in working on the question or problem. May include information from scholarly presentations, Power Points, curator talks, presenter talks, and readings, as well as images, videos, photos, field trips etc.
Time Frame:	This review will take one class period.
Instructional Sequence:	*See game directions.
Anticipated challenges	Students with a learning disability may work with a partner to answer the problem.
Curriculum Links:	H3.0.1, H3.0.2, H3.0.8

***See Attached game and directions.**

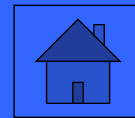
Directions for Playing Jeopardy

- After you download the game, you will already be in the slide show.
- Divide the class into two teams. They will form two lines in front of the classroom.
- The first student in line will pick a problem. Just click on the point value and it will take you to that problem. The student will have one minute to answer the question.
- After the given time period, just click anywhere on that slide and it will take you to the correct answer.
- The scorekeeper is the teacher.
- If an incorrect answer is given, the opposing team will have a chance to answer and gain the points.
- To get back to the main page, just take the mouse and roll over the house in the lower right-hand corner.
- It is now the next teams turn. Just repeat the above steps.
- The team with the most points is declared the winner!
- If you want to add more excitement to the game, choose a captain for each team at the beginning of the game. The captains will answer the Final Jeopardy Question for 10 extra points!
- Final Jeopardy question: In 1928, in recognition of a lifetime of inventing and achievement, the United States Congress voted to give Thomas Edison this.
- Answer: What is a Medal of Honor?

Early Life	Friends and Family	Employment	Inventions	Teacher's Choice
<u>1pt</u>	<u>1pt</u>	<u>1pt</u>	<u>1pt</u>	<u>1pt</u>
<u>2pt</u>	<u>2pt</u>	<u>2pt</u>	<u>2pt</u>	<u>2pt</u>
<u>3pt</u>	<u>3pt</u>	<u>3pt</u>	<u>3pt</u>	<u>3pt</u>
<u>4pt</u>	<u>4pt</u>	<u>4pt</u>	<u>4pt</u>	<u>4pt</u>
<u>5pt</u>	<u>5pt</u>	<u>5pt</u>	<u>5pt</u>	<u>5pt</u>

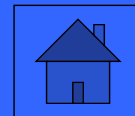
The state where Thomas Edison was born.

What is the state of Ohio?



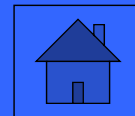
The Michigan town where Thomas spent most of his childhood.

What is Port Huron, Michigan?



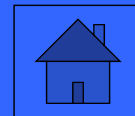
When Thomas was 12 years old, he began selling these on the Grand Trunk Railway.

What are newspapers?



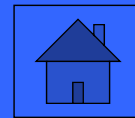
For saving the life of a station official's child,
Thomas was taught this.

What is telegraphy?



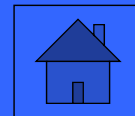
In 1862, Tom published a weekly newspaper known as the “Grand Trunk Herald”, printing it in a freight car that also served as something else for Tom to try things in his spare time.

What is a laboratory?



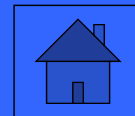
Young Tom spent only three months in school. This person taught him the three “R’s” at home.

Who is Thomas Edison's mother?



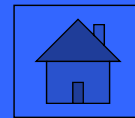
Thomas Edison and his wife Mary called their first two children by these nicknames.

What are the names 'Dot' and 'Dash'?



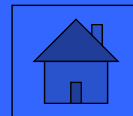
Tom proposed marriage to his second wife over this communication device using Morse Code.

What is the telegraph?



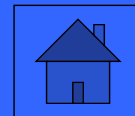
This friend of Thomas Edison asked him if he could find an alternative use of rubber for automobile tires.

Who is Harvey Firestone?



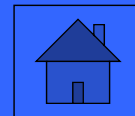
One of Edison's best friends was a car maker from Dearborn, Michigan, who also perfected the assembly line.

Who is Henry Ford?



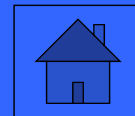
Edison made \$40,000 on his first successful invention
He used the money from this invention to set up a
laboratory in New Jersey.

What is a Stock Ticker?



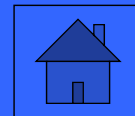
The first great invention developed by Edison in Menlo Park was this invention. This machine could record and reproduce sound. This invention also brought Edison international fame.

What is a phonograph?



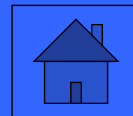
Although not new, Edison developed the first one that was practical for home use and safe. Although they look somewhat different, we still use them today.

What is the incandescent light bulb?



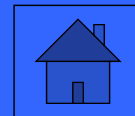
While working on his phonograph, Thomas Edison began working on a device that, “does for the eye what the phonograph does for the ear”.

What is the motion picture
camera?



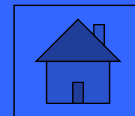
This invention became Edison's most profitable
product. It also took him ten years to develop
First thought to be used for storage
for electric cars, it was later used to help
provide lighting. You might use these in a
flashlight today.

What is an alkaline battery?



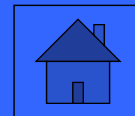
By the time Edison was sixteen years old, he was proficient enough to work at this job full time.

What is a telegraph operator?



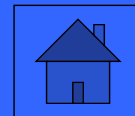
When Edison moved to Boston, he began to change his job from a telegrapher to this, something he would do for the rest of his life.

What is an inventor?



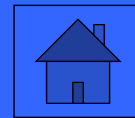
In 1876, Edison moved his family to this small village, twenty-five miles southwest of New York City, to a place containing all the equipment necessary to work on any invention.

What is Menlo Park New, Jersey?



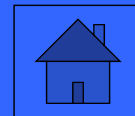
While working at inventing at his test laboratory in New Jersey, Thomas Edison gained this famous nickname.

Who is the 'Wizard of Menlo Park'?



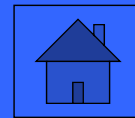
After his marriage to his second wife Mina, Thomas Edison built his last laboratory in this New Jersey town.

What is West Orange, New Jersey?



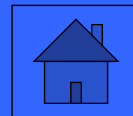
While working in New York City, Thomas Edison
slept in the basement of this building.

What is the basement of a gold company?



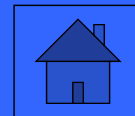
The words from a nursery rhyme that Edison used to speak into the first phonograph.

What is “Mary Had a Little Lamb?”



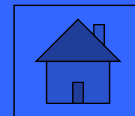
A president of the United States that invited Thomas Edison to visit him at the White House in 1878, after the invention of the phonograph.

Who is President Rutherford B. Hayes?



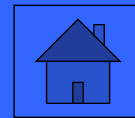
Thomas Edison was probably the world's greatest
of these.

What is an inventor?



Three days after Edison's death, these were dimmed
for one minute all over the United States in honor
of the great inventor.

What is dim the lights?





America's Greatest History Attraction

Elementary Lesson Plan 7

Deborah Limage, Carstens School, Detroit, MI

Title of Lesson:	Changing Lifestyles
Grade Level:	4-5
Overview:	Students will compare lifestyles of people from the mid 18 th - 19 th century to current lifestyles of the early 21 st century
Central Question:	Have people used technology to improve the way they work?
Learning Objective:	Students will be able to compare and contrast technology from the past to the technology used today. Students will also be able to “invent” or improve “old” technology to meet the demands of the future.
Assessment Tools:	A chart noting the technology used in the past to technology used today. This chart should also show improvements made to this technology to meet the demands for the future.
Key Concepts:	Technology, Efficiency, Growth, Invention, Innovation, Compare/contrast
Evidence/Sources:	<p><u>The United States</u> (grade 5 textbook), Scott Foresman, 2008, pp. 200-229, 536-558, 560-592</p> <p><u>Regions: Adventures in Time and Space</u> (grade 4 textbook), Macmillan/McGraw-Hill, 1997, pp. 228-237, 260-263, 320-325, 326-327,</p> <p>Cowan, Ruth Schwartz, “More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave” (New York: Basic Books, 1983) pp. 3-75.</p> <p>Larkin, Jack, “The Reshaping of Everyday Life 1790-1840” (New York: Harper, 1989) pp. 1-61.</p>
Site Exploration:	Daggett Farm: a 1760’s Connecticut farmstead in which students will experience spinning, weaving and sewing and discuss issues from the perspective of a yeoman farm family.

Susquehanna Plantation: an 1850's Maryland tobacco plantation worked by 50 slaves.

Hermitage Plantation Slave Quarters: Students will investigate the cultural lives of enslaved African Americans.

Firestone Farm: an 1880's farm where students will study farming tools.

Mattox Family Home: During the Great Depression, Amos Mattox worked as a farmer, shoe maker, and preacher during the 1880's.

Time Frame: Two days (including a trip to Greenfield Village)

Instructional Sequence: Using the following concept words, students should give a definition (using their own words) and an example for each - Technology, Efficiency, growth, invention, and innovation

Students, in groups, should brainstorm for the different types of technology we use today. Students should also describe the uses for each. (For example: microwave oven, high definition television...)

Students will begin completing the chart: "Technology for the Past and Present".

A. Before visiting Greenfield Village (GFV): Students should develop a list of examples of technology used today. This list should be listed under the column labeled "Present". For example, this list could include microwave under "cooking" or television under "entertainment".

B. While visiting GFV, students will visit Daggett Farmhouse, Susquehanna Plantation, The Hermitage, Firestone House, and The Mattox Family Home and match-up the various types of technology they see at these locations with the technology they labeled in the "Present" column.

C. After visiting GFV, students will compare/contrast the technology labeled under the "Past" and "Present" columns and think of how these technologies have changed over the years. Using the "Future" column, students should imagine how these technologies could evolve or improve for future uses.

Student Project Idea: With partners, students should design a home of the future illustrating technology labeled under “Future” on their chart. This home should include all categories listed on this chart.

Anticipated challenges: Students may have a difficult time “imagining” future situations for inventing or improving existing technology. A possible solution for overcoming this hurdle may be to examine existing technology and its reasons for need then projecting this method toward forecasting future concerns and looking for solutions for these concerns.

Students oftentimes want to “invent” fantastical solutions to every day problems. For example, they may envision super robots or teleporting. A possible solution to this dilemma may be to envision “real-life” solutions to “real-life” problems. For example: a “real-life” problem may be high traffic. A possible solution may be inventing a bullet-speed mass transit system.

Curriculum Links: Michigan Grade Level Content Expectations Grade 4:

4-H3.0.1 Use historical inquiry questions to investigate the development of Michigan’s major economic activities (agricultural, mining, manufacturing, lumbering, tourism, technology, and research) from statehood to present. What happened? When did it happen? What was involved? How and why did it happen? How does it relate to other events or issues in the past, in the present,

4-H3.0.4 Draw upon stories, photos, artifacts, and other primary sources to compare the life of people in towns, and cities in Michigan and in the Great Lakes region during a variety of time periods from 1837-1900.

4-H3.0.5 Use visual data and informational text or primary accounts to compare a major Michigan economic activity today with that same or a related activity in the past.

4-G4.0.2 Describe the impact of immigration to the United States on the cultural development of different places or regions of the United States (e.g., forms of shelter, language, food).

Michigan Grade Level Content Expectations Grade 5:

5-U2.3.2 Describe the daily life of people living in the New England, Middle, and Southern colonies.

5-U2.3.3 Describe colonial life in America from the perspectives of at least three different groups of people (e.g., wealthy landowners, farmer, merchants, indentured servants, laborers and the poor, women, enslaved people, free Africans, and American Indians).








5-U2.3.4 Describe the development of the emerging labor force in the colonies (e.g., cash crop farming, slavery, indentured servants).

5-U2.3.5 Make generalizations about the reasons for regional differences in colonial America.

5-U3.1.8 Identify a problem confronting people in the colonies, identify alternative choices for addressing the problem with possible consequences, and describe the course of action taken.

Technology for the Past and Present

1. Before visiting Greenfield Village (GFV): Students should develop of list of examples of technology use today. This list should be listed under “Present”.
2. While visiting GFV, students will visit Daggett Farmhouse, “Susquehanna Plantation, The Hermitage, Firestone House, and The Mattox Family Home and match-up the various types of technology they see at these locations with the technology they labeled in the “Present” column.
3. After visiting GFV, students will compare/contrast the technology labeled under the “Past” and “Present” columns and think of how these technologies could evolve or improve for future uses.

TECHNOLOGY	PAST	PRESENT	FUTURE
Cooling 			
Cooking 			
Heating 			
Sleeping 			
Washing Clothes 			
Entertainment 			
Communication 			



America's Greatest History Attraction

Elementary Lesson Plan 8

Ann Mischler, Cleveland Hill Elementary, Cheektowaga, NY

- Title of Lesson:** Thomas Edison Alphabet Book
- Grade Level:** 4
- Overview:** After completing the unit on current electricity and reading, A Picture Book of Thomas Alva Edison, the students will produce a Thomas Edison Alphabet Book.
- Central Question:** How did Thomas Edison impact the United States?
- Objectives:** Students will construct a Thomas Edison Alphabet Book.
- Assessment Tools:** Rubric
- Key Concepts:** Industrialization, Invention, Innovation
- Evidence/Sources:** Dictionaries, computers, A Picture Book of Thomas Alva Edison by David A. Adler, images from scholars, images from the Benson Ford Research Center, Images from <http://www.hfmgv.org/village/map.aspx>
- Time Frame:** 45 minute class period to read A Picture Book of Thomas Alva Edison by David A. Adler
30 minute class period to work in small groups to draft pages
45 minute class period for individual production and publication of pages
- Instructional Sequence:** Students have substantial prior experience using the computer.
1. As a large group, the students will read A Picture Book of Thomas Alva Edison by David A. Adler.
 2. Students will identify important or challenging vocabulary related to Thomas Edison.

3. Each group will assign students to draft pages. Each page will contain the following: 1 – Vocabulary word (one for each letter of the alphabet), 2 – Definition, 3 - Part of speech, 4-Picture related to the word, and 5- Sentence using the word related to Thomas Edison. The book can be in the shape of the Menlo Park Lab.
4. Students will utilize the computer template to publish. The students will include the vocabulary word, definition, part of speech, and sentence. The students will import an image appropriate to their vocabulary word. An image bank will be provided.

Student Project: Working in small groups, students will publish a Thomas Edison Alphabet Book.

Anticipated Challenges: Students may have difficulty producing words for specific letters. Students without substantial computer experience may have difficulty producing the book from the template.

Curriculum Links: New York
Subjects: English Language Arts
Social Studies
Math, Science, and Technology

Standards: ELA Standard 1 and 2
SS Standards 1, 3, and 4
MST Standards 2 and 6

Possible Words for Alphabet Book

A – apparatus, ailment
B – Bell, battery, boxcar
C – Carver, carbon, current, carbon transmitter
D – duplex, discover, depot, dynamo
E – experiment, electricity, engineer, electric pen, electromagnet
F – Faraday, fuse
G – galvanometer, glass, generator
H – house
I – invention, inventor, incandescent, illustrate, innovator
J – job
K – kinoscope
L – light bulb, laboratory, lamp, lampblack
M – Menlo Park, Morse, Mina Miller, Mary Stilwell
N – New Jersey
O – Ohm’s Law, operator
P – phonograph, patent, power, parallel circuit
Q – quadruplex
R – research, repeater
S – storage battery, sawmill, stock ticker, socket
T – telegraph, telephone, thread
U – ulcer
V – voice, vacuum
W – wet cells, Western Union, wires, West Orange
X – (x – marks the spot where Edison signs)
Y – yellow
Z – zap

A

Vocabulary Word

Definition
Part of Speech

Image

Sentence

Name:

Rubric for Thomas Edison Alphabet Book

4

3

2

1

Cover

- Title
- Authors
- Image
- Publication Date

Includes all four components

Includes three components

Includes two components

Includes one component

Pages

- Vocabulary word
- Part of Speech
- Definition
- Image

Every page includes all components

Most pages include all components

Most pages include only three components

Most pages include only one or two components

Sentence

Every page includes a sentence relating to Thomas Edison

Most pages include a sentence relating to Thomas Edison

Some pages include a sentence relating to Thomas Edison

Few pages include a sentence relating to Thomas Edison

Mechanics

- Capitalization
- Punctuation
- Spelling
- Structure

Few or no errors

Some errors

Many errors that do not interfere with the understanding of the text

Many errors that do interfere with the understanding of the text



America's Greatest History Attraction

Elementary Lesson Plan 9

Amanda Mulbay-Harries, Spinning Hills Middle School, Dayton, OH

- Title of the Lesson:** The Railroad Revolution
- Grade Level:** 5th grade
- Overview:** Students will spend a short unit learning how transportation has evolved over time, the ways the railroad changed the United States, and how the railroad has affected our environment in both positive and negative ways.
- Central Question:** Can you identify and give examples of how the railroad aided in the expansion of industry?
- Learning Objectives:**
1. Students will be able to identify how the railroad helped the US expand.
 2. Students will compare and contrast methods of transportation.
 3. Students will recognize various types of power and how they relate to industry.
 4. Students will be able to identify pros and cons of different types of power.
- Assessment Tools:**
- Formative Assessments:
- Exit slips
 - Venn Diagrams
 - Notes from gallery walk
 - Classroom Discussion
- Summative Assessments:
- Student extension projects
- Key Concepts:**
1. Evolution of transportation methods across history
 2. Use of steam power to expand the railroad and the United States
 3. Positive and negative environmental impacts of industry

Evidence/ Sources: Photos of train and roundhouse taken at The Henry Ford
Additional photographs from Ohio Historical Society

Duration: 3 days (45 minutes per day), plus extra days for extension projects

Instructional Sequence: Introductory Activity:

Students will complete a gallery walk with various pictures of the railroad.

Photos will be posted around the room, and the students will move from station to station in small groups. They will have a series of questions at each station to respond to.

Students will write their responses directly on the chart paper containing the photo. Once all groups have visited each station, we will complete a K-W-L chart as a class.

Teaching Activity:

Students will be working in their small groups. Each group will receive two copies of *Graphic America: the Revolution in Industry* by John Perritano. As students read, they will record main points about each method of 'power.' When each group is completed, go over chart as a class and make sure they are complete. Complete exit slip today with the answer to the following question: *Which method of power do you think is the most useful? Explain your answer.*

Re-Teaching Activity:

Students will draw a method of power from a baggie while in their group. They will choose from the following: man, animal, steam, nuclear, and electric power. The students will then regroup into small groups with the same type of power. While in their new 'power' group, students will discuss and list the pros and cons of their type of power, including effects on people, the environment, and industry. When the 'power' groups have completed their charts, they will

report their findings back to their original group. We will then share and discuss any interesting points or questions as a class.

Student Project Ideas:

Extension Activity Possibilities:

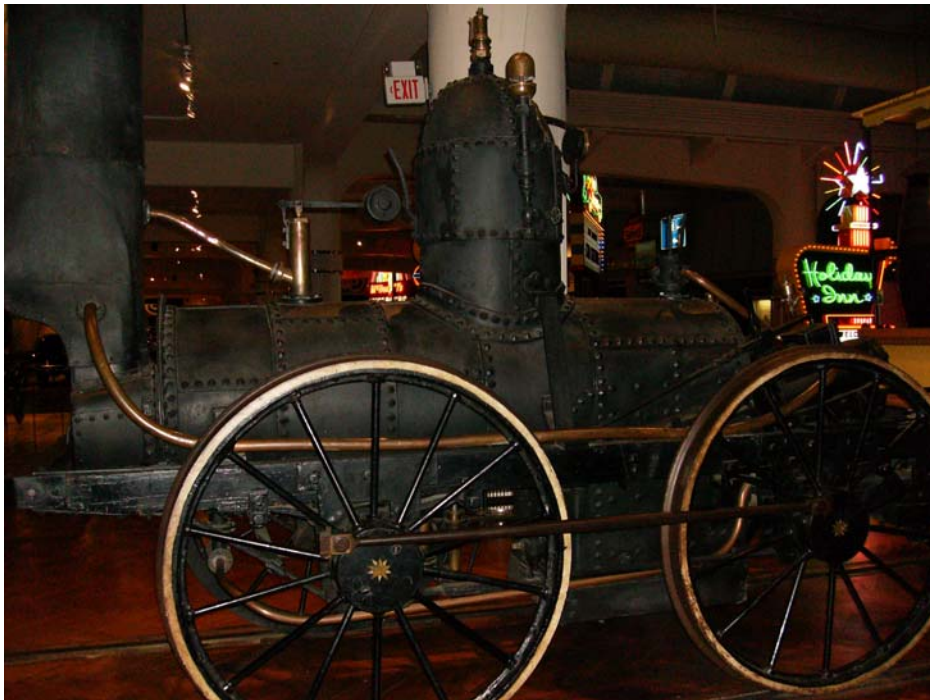
- Research and create a photo collage of a power type we studied.
- Create a cartoon showing the progression from man power to modern day power methods.
- Create a final copy of a Venn-diagram comparing and contrasting any two types of power.
- Write a newspaper article detailing the first use of one of the types of power. Include the who, what, where, when, why, and how.
- Create a poster advertisement selling one of the types of power. Be sure to explain why your type is better than the others. Use one of the advertising methods we have talked about.

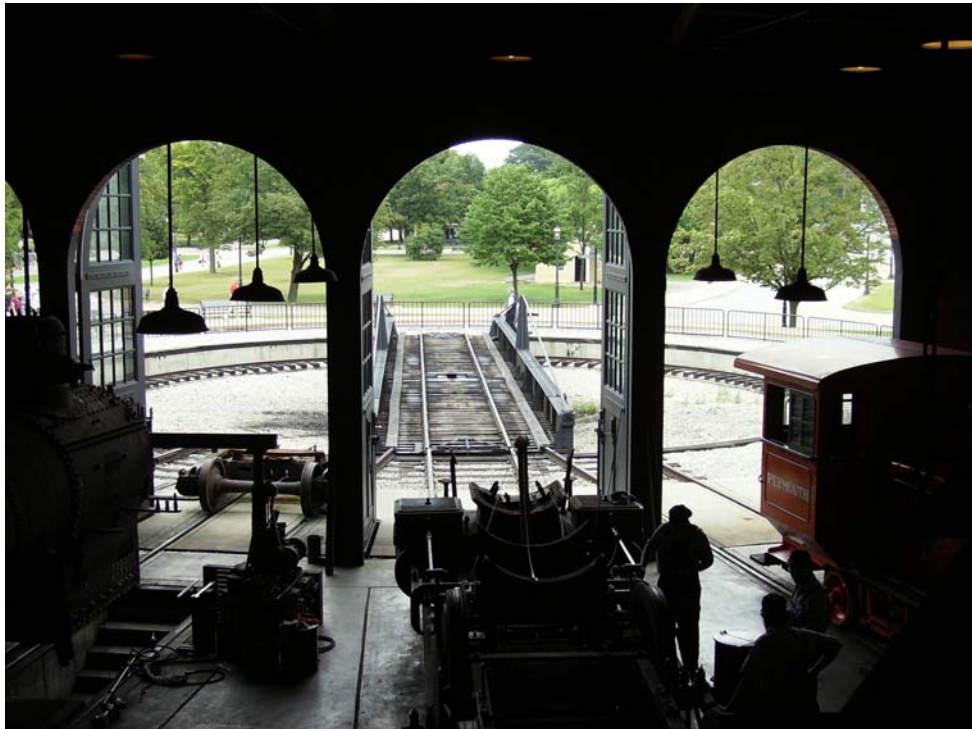
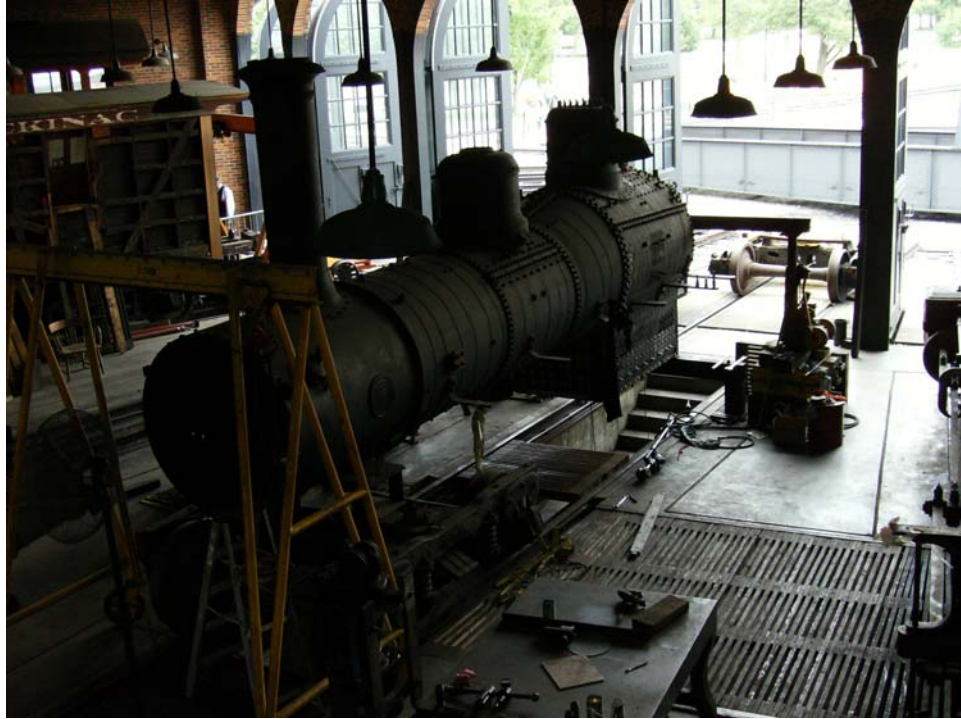
Curriculum Links:

Ohio 5th Grade, Social Studies Content Standards:

1. Explain the impact of settlement, industrialization and transportation on the expansion of the United States.
2. Analyze the positive and negative consequences of human changes to the physical environment including:
3. Differentiate between primary and secondary sources.

Photos for Gallery Walk

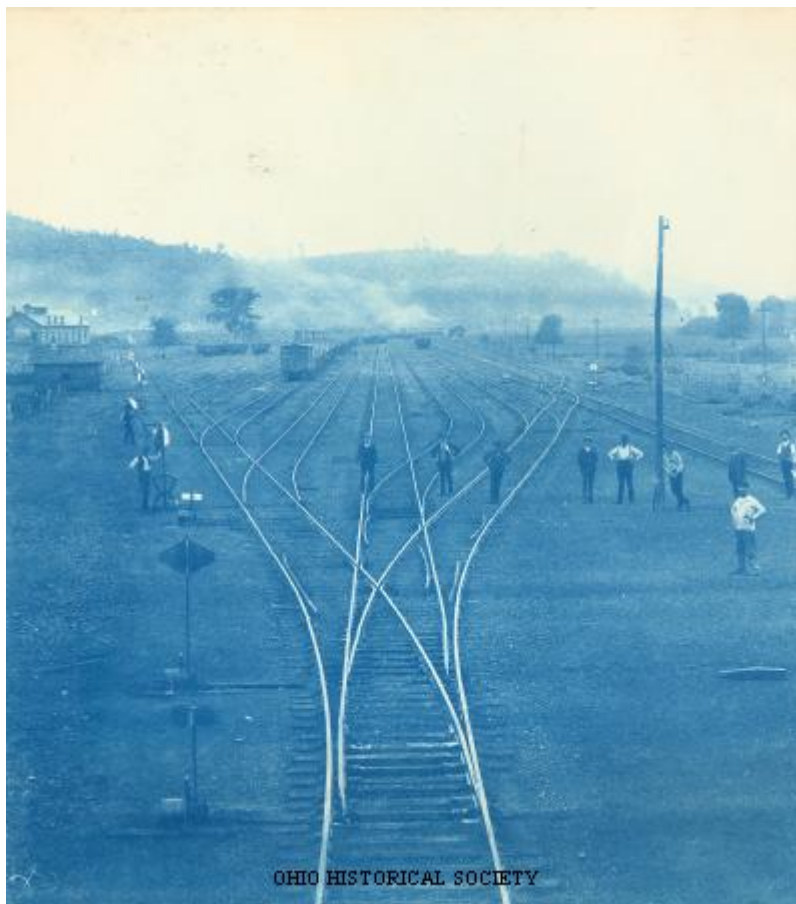




The above photos were taken at The Henry Ford



Modes of Transportation in Dayton, Ohio, photograph, image number AL02993, Ohio Historical Society, Columbus.



Converging Railroad Tracks in South Central, Ohio, Cyanotype, image number AL03634, Ohio Historical Society, Columbus.

Name: _____

Types of Power

Fill in the following chart with key points about each type of power. The information you need can be found in *Graphic America: the Revolution in Industry* by John Perritano. You do not need to write in complete sentences as these are notes.

Type of Power	Where Does the Power Come From?	Where is the Power Used?	Interesting Points
Man Power			
Animal Power			
Steam Power			
Electric Power			
Nuclear Power			

Name: _____

Type of Power: _____

Pros (good things)	Cons (not so good things)

Would you recommend this type of power to a business who needed a cost effective and green factory? Why or why not?



America's Greatest History Attraction

Middle School Lesson Plan 1

Arlene Badger, Apex Middle School, Apex, NC

Lesson Plan Title: The Industrial Revolution: Marketing an Invention/Innovation

Grade Level: 8th Grade

Overview: This project is a major part of a unit on the Industrial Revolution and takes 8-9 days to complete. The project focuses on inventions/innovations of the Industrial Revolution and contains four parts, any of which could stand alone if there are time constraints. Students not only learn about the many inventions but also discover how to communicate ideas, work within group dynamics, and use primary sources.

Central Question: What were some of the inventions/innovations of the Industrial Revolution that changed the everyday lives of Americans?

Objectives: By the end of the project students will:

1. increase knowledge of the many inventions/innovations of the Industrial Revolution
2. understand the impact of the Industrial Revolution on American Society
3. gain experience using primary resources

Evidences/Sources: Students will use computers to access websites and primary documents to complete the project.

Assessment: By using the different planning sheets, the teacher will be able to monitor a group's progress throughout the entire process. After the presentation is completed, groups will turn in all work to the teacher for an overall grade. Students will also be asked to fill out a group participation sheet and assign a grade to group members. Finally, students will write a reflection about their experience.

Instructional Sequence: **Before Day 1:** Discuss in brief the upcoming project and have students choose groups. A group of four students works best.

Day 1 (Friday): Introduce the project, discuss the project requirements in depth, assign a due date, and have each group choose an invention/innovation. Then have the groups complete the Project Plan Sheet. (Each student needs one of these to keep track of his/her assigned roles.) Each group will be given the rest of planning sheets (one per group) for the project. Each day will focus on a certain project requirement but students may work on any part of the project at any given time.

Days 2&3 (Mon. /Tues.): Students will be in the Computer Lab researching their topics, gathering information, printing out written text and pictures, and conferring with the teacher about any questions that come up.

Day 4 (Wed): Students are back in the classroom and may return to the Computer Lab as needed. Today the focus will be on planning the poster. Using the Planning the Poster worksheet, each group will plan the poster format for their invention.

Day 5 (Thurs.): Students will plan the design of their brochure by using their own notebook paper and folding it into thirds.

Day 6 (Fri.): Today's focus is on planning, writing, and running through the 30 second commercial. Homework is for each group member to put the final touches on their part of the project.

Day 7 (Mon.): The final touches are made to the project. Students will work on their presentations and groups will be called out to film commercials.

Days 8&9 (Tues. /Wed): Use both days if needed for project presentations. For homework, have each student write a one page reflection about what they have learned not only about their invention but others as well. Then students are to predict what they think the impact will be of the Industrial Revolution on America.

Industrial Revolution Project: Marketing an Invention/Innovation

Congratulations! Your group has just been hired by an inventor to help him bring his new invention/innovation to market. Your job has two parts. First, you need to become an expert on the invention/innovation-find out how it works, what it's for, and how it's made. Second, you need to figure out how to help your client turn his idea into a profit making business. For that you must identify potential buyers and would-be investors. Below is a list of inventions/innovations. Your group should choose one. Once an invention/innovation has been selected, it will no longer be available.

Inventions/Innovations:

Model T	Steam Locomotive	Band-Aids
Assembly Line	Refrigerator	Electric Fan
Incandescent Light Bulb	Dishwasher	Contact Lenses
Telephone	Gas Mask	Traffic Lights
Zeppelin	Short Wave Radio	Nylon
Power Loom	Helicopter	Toilet Paper
Tin Foil Phonograph	Insulin	Windshield Wipers
Sewing Machine	Lie Detector	Blue Jeans
Neon Lights	Metal Detector	Crayons
Airplane	Carpet Sweeper	Drinking Straws
Glider	Zippers	Air Conditioner
Combine	Kinetoscope	Roller Skates
Tractor	Kinetograph	Ferris Wheel
Typewriter	Kinetophone	Roller Coaster
Washing Machine	Kleenex	Mechanical Cash
Escalator	Burglar Alarm	Register
Steamboat	Wireless Telegraph	Safety Razor
Bicycle	Microwave Oven	

Project Requirements:

Poster (50 Points) - The poster needs to have a slogan, pictures, important information about the invention, and who invented it. Remember, you are trying to sell this invention. Make your poster bright, fun, and attractive so that potential buyers and investors will buy into your product.

Brochure (50 Points) - The brochure needs to include the same things as the poster only on a much smaller scale. Remember, brochures are usually folded so keep this in mind as you decide the size of pictures you add and the placement of your information.

Commercial (50 Points) – Your group will be filming a 30 second ad (just like a TV commercial). The commercial will air at the end of your presentation. You may use your poster or brochure in the commercial.

Presentation (50 Points) - During your presentation, you must speak to your audience, be persuasive, provide good information, know what you are selling, answer all questions asked, and work as a team.

Total Project Points (200 Points)

Industrial Revolution Project Plan Sheet

Group Members:

Group Invention/Innovation: _____

Now that you have selected an invention/innovation, use the space below to brainstorm a list of ideas/topics your group wants to research about your invention.

This project is a group effort. Since our time in the computer lab is limited, it is very important that you have specific roles planned out for each group member. Using the list above and the different requirements for the project, plan out the specific

Example:

Johnny

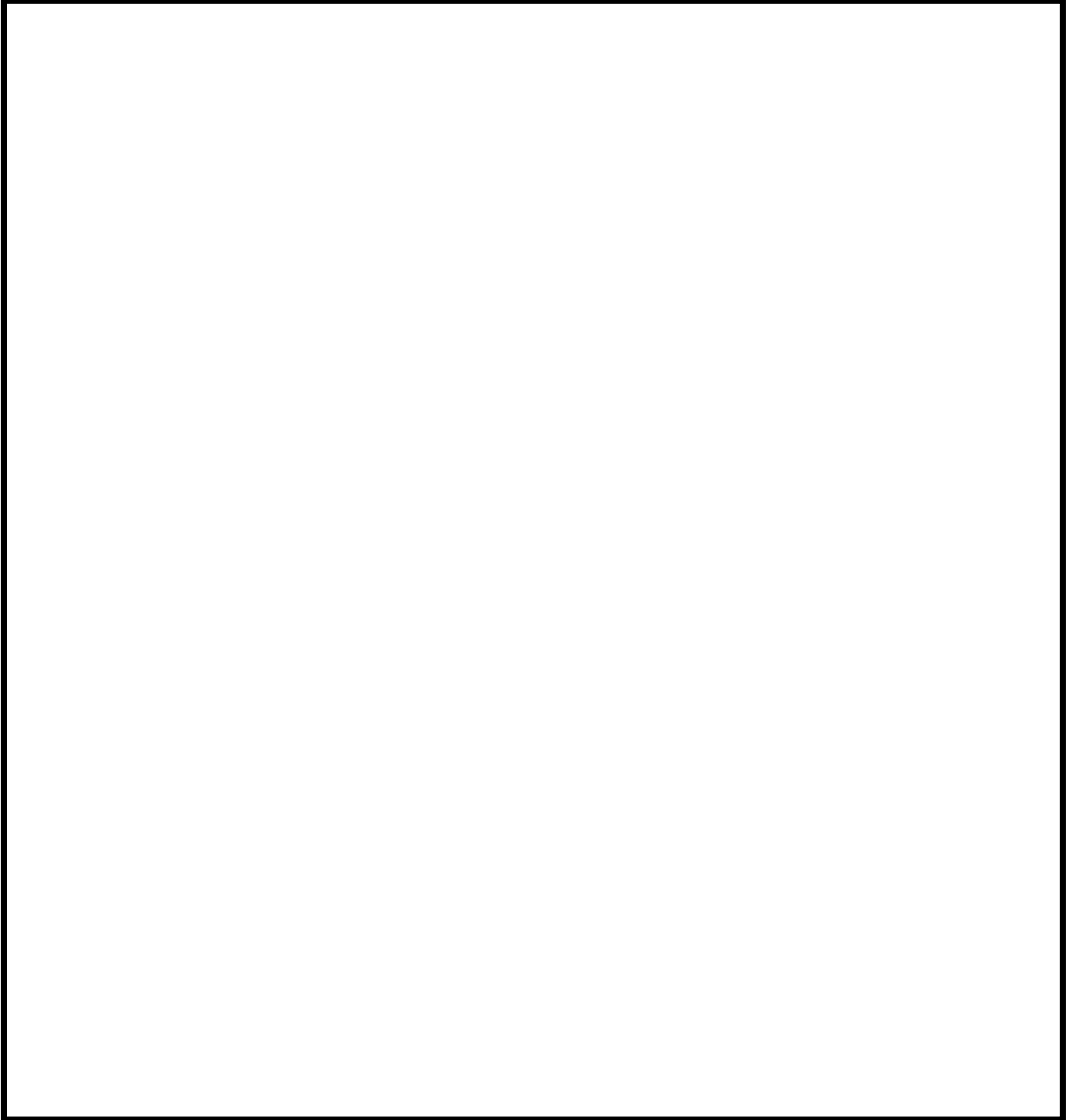
Research inventor, work on poster,
print pictures of invention

Group Member's Name

Specific Role

Planning the Poster

Using this sheet as a guide, sketch out your poster. Consider the required parts, the pictures, and the information you have printed when planning. This sheet will be turned in as evidence of your group's work and planning skills – take it seriously! When you have finished sketching, begin working on your actual poster!



Planning the Brochure

Use a piece of your own notebook paper and turn it sideways. You are going to fold it into thirds by folding first the right side over and then the left. Now decide where you will place the information on the brochure. Remember, you need to include your advertising slogan, pictures, important information, and color. The notebook paper used to plan the brochure will be turned in as evidence of your group's work and planning skills – take it seriously! When you have finished sketching, begin working on your actual brochure. You may either draw/write the brochure by hand or create one on the computer.

Group Members:

Planning the Presentation

The presentation to prospective buyers and investors (your classmates) should be 5-7 minutes long. At the end of the presentation, your recorded commercial will be played. All members should take part. Remember, you are trying to convince people to buy or invest in the product. Be persuasive and provide good information. Be prepared to answer questions from your audience. Any notes you use will be turned in as proof of your group's work and planning skills. There will be class time provided to run through your presentations.

Planning a Commercial

Congratulations, you have almost completed your Invention Project. The last product that you will create is a 30 second commercial in which you try to persuade buyers to invest in your product. Before you begin filming your commercial, it is important that you have a plan. Using this sheet, plan your commercial!

Name	Role in Commercial (actor, director, writer, etc.)

- 1. Brainstorm** – Using what you have learned during your research, list possible ideas for creating your commercial. Use this space to brainstorm information that you want to use, possible props, costumes, etc.
- 2. Narrow Down** – Using the ideas that you just listed, narrow down your list to items you definitely want to include.
- 3. Plan the Script** – Now that you have all ideas in place, decide who is going to write the script, act, dance, etc. You may choose to make your commercial a “news update” or just a fun commercial. PLEASE NOTE: *Everyone* must have a role. Use this space to come up with a script for you commercial. It is important that you list peoples’ names and their specific task/line in the commercial.
- 4. Approval** – After all of these steps are complete, bring your plan sheet to a teacher for approval!

Industrial Revolution Project Rubric

Please bring your copy of the rubric on the day of your groups' presentation.

Group Members: _____
 _____ Core _____

<p><u>Poster</u></p> <p style="text-align: center;">Slogan 10</p> <p style="text-align: center;">Pictures 10</p> <p style="text-align: center;">Color/Creativity 10</p> <p style="text-align: center;">Information 20</p>	<p>_____ / 50</p>
<p><u>Brochure</u></p> <p style="text-align: center;">Slogan 10</p> <p style="text-align: center;">Pictures 10</p> <p style="text-align: center;">Color/Creativity 10</p> <p style="text-align: center;">Information 20</p>	<p>_____ / 50</p>
<p><u>Presentation</u></p> <p style="text-align: center;">Worked as a team 15</p> <p style="text-align: center;">Persuasive 10</p> <p style="text-align: center;">Good information about product 25</p>	<p>_____ / 50</p>
<p><u>Commercial</u></p> <p style="text-align: center;">Worked as a team 10</p> <p style="text-align: center;">Persuasive 15</p> <p style="text-align: center;">Sold Product 15</p> <p style="text-align: center;">Creativity 10</p>	<p>_____ / 50</p>
<p>Total Points</p>	<p>_____ / 200</p>

Group Participation – please write the names of your group members (including yourself) and the participation grade –out of 100- you believe each person deserves.

Name:

Grade:

Industrial Revolution Project Checklist

After your presentation, place each item in the following order, staple together, and turn into your teacher.

- Inventions Project Rubric(one from each member)
- Industrial Revolution Project Plan Sheet(turn in just one)
- Poster Planning Sheet
- Brochure Planning Sheet(piece of notebook paper)
- Brochure
- Commercial Planning Sheet
- Any notes for Presentation

- **Turn in your poster separately from the rest of the project.**
- ion Project Plan Sheet(turn in just one)
- Poster Planning Sheet
- Brochure Planning Sheet(piece of notebook paper)
- Brochure
- Commercial Planning Sheet
- Any notes for Presentation

- **Turn in your poster separately from the rest of the project.**

Industrial Revolution Project Reflection

You are to write a one page reflection about what you learned by participating in this project. Discuss not only what you discovered about your invention but the others you heard presented as well. Also, talk about your research. Was it easy or hard to find information? Where primary sources easily available? Finally, consider what you have learned and predict what they think the impact will be of the Industrial Revolution on America.

The reflection needs to be one page long and may be written or typed. It should contain an introductory sentence, your thoughts on the project, and a concluding sentence. Please check for spelling and grammar



America's Greatest History Attraction

Middle School Lesson Plan 2

Janet Flichtbeil, Aloha-Huber Park, Beaverton, OR

Lesson Plan Title: Introduction to America's Industrial Revolution

Grade Level: 5-8

Time Frame: 50-60 minutes

Overview: This lesson engages the students in brainstorming activating their minds to some of the changes that occurred in various aspects of American life as a result of some technological improvements from the time known as the Industrial Revolution. The ensuing unit will delve into the effects of innovation and invention on economy, urbanization, immigration, and political reforms of the late 19th Century and early 20th Century. The activity is open-ended, allowing for discourse at basic as well as sophisticated levels.

Central Question: How did new inventions and innovations affect life in America?

Curriculum Links:

National History Standards:

4.2.A: Explain how the major technological developments that revolutionized land and water transportation arose and analyze how they transformed the economy, created international markets, and affected the environment.

4.2.B: Analyze how rapid urbanization, immigration, and industrialization affected the social fabric of racial hostility.

4.2.C: Assess the connection between industrialization and immigration.

6.1.A: The student understands the connections among industrialization, the advent of the modern corporation, and material well-being.

6.3.B: Analyze the causes and effects of escalating labor conflict.

Oregon/Beaverton School District Standards and Curriculum Guidelines (Grade 8)

Explain how technological, transportation, and communication innovations transformed the American economy in the late 19th Century.

Explain how business leaders sought to limit competition and maximize profits in the late 19th Century.

Analyze how political machines gained power and were viewed by immigrants, middle-class reformers, and political bosses.

Understand the effect of European immigration after 1870 and rural to urban migration.

Objectives:

The student will:

- compare pictures of innovations, explaining differences
- determine the purpose of the innovation and who will make use of the object
- explore changes to American life as a result of each innovation: economic changes, social changes, political changes, etc.

Remediation:

Teacher will

- place students in heterogeneous groups or with appropriate partners
- allow students to use home language
- allow students to give personal examples for explanations

Enrichment:

Teacher will

- expect higher-order thinking
- prompt students to infer and connect

Resources:

Placards (13 follow the lesson plan) with pictures of early item and innovation

Lesson Procedure:

Discuss technological changes in the present day, reasons for the change, and effects of the change on life today: social, economic, and political effects.

Introduce the era known as the Industrial Revolution.
Demonstrate the shared Placard activity:

- Have students take notes (notebook paper or cards) as follows:

Placard ____
Describe in detail
Picture 1

Describe in detail
Picture 2

Social Changes

Economic Changes

Political Changes

- Have students work in small groups or partners, sharing Placards. They may write up the Placards in any order.
- Allow about 45 minutes for Placard activity

Explain the summative independent activity: writing a short essay summarizing the social, economic, and political effects of changes during the Industrial Revolution. Provide the Proficiency Guidelines and Scoring Elements for this essay. This essay could be completed in class or for homework.

Assessments: Formative: during group and class discussion, both oral and written responses

Summative: student essay, summarizing probable effects of innovations during America's Industrial Revolution on the life of people.

Proficiency Guidelines:

Novice (N); Working Toward Proficiency (WP); Nearly Proficient (NP); Proficient (P); Highly Proficient (HP)

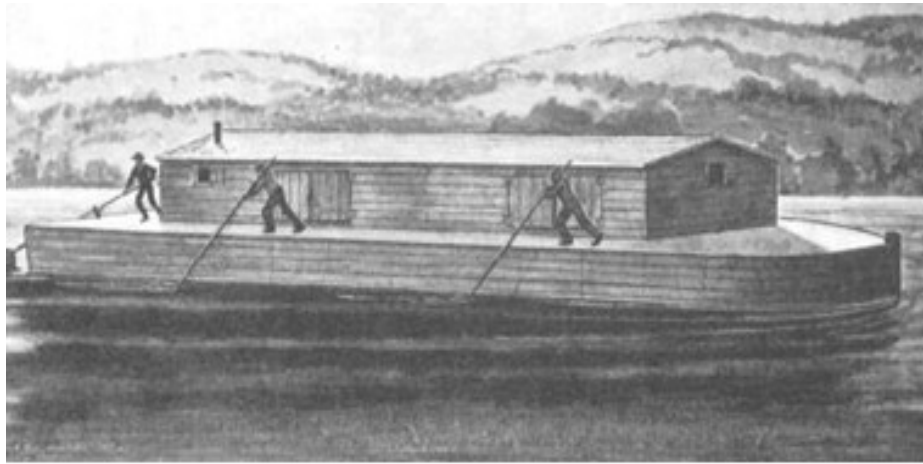
Scoring Elements: Introduction: Industrial Revolution N, WP, NP, P, HP

Economic effects N, WP, NP, P, HP

Social effects N, WP, NP, P, HP

Political effects N, WP, NP, P, HP

PLACARD A



Picture 1



Picture 2

PLACARD B



Picture 1



Picture 2

PLACARD C



Picture 1



Picture 2

PLACARD D



Picture 1



Picture 2

PLACARD E



Picture 1

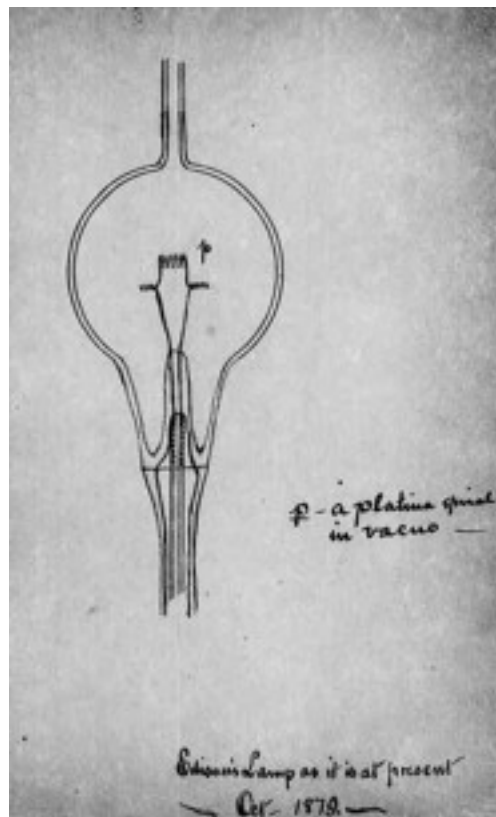


Picture 2

PLACARD F



Picture 1



Picture 2



America's Greatest History Attraction

Middle School Lesson Plan 3

Aimee Saddler, Tualatin Valley Junior Academy, Hillsboro, OR

- Lesson Plan Title:** Sights and Sounds
- Grade Level:** Grade 8
- Overview:** This lesson will attempt to show students the connections between the modern car and the Model T. Students will participate in a series of activities that ask them to evaluate the “Sights and Sounds” of the modern automobile and then compare them with the Model T.
- Central Question:** How are the Model T and the modern automobile connected?
- Learning Objectives:** Students will be able to:
- Identify similarities and differences between the Model T and modern automobiles
 - Discuss the role of the Model T in early 20th Century America
 - Use specific examples to describe the connection between the Model T and modern automobiles
- Assessment Tools:** Students will be observed while participating in each of the lesson activities. Students will also be asked to respond in writing to the lesson’s Central Question. (This lesson will be only a portion of a larger unit on the Industrial Revolution which will include a cumulative assessment piece).
- Sources:** For some of the activities students will need access to the Internet either in the classroom or at home. The remainder of the activities can be completed using the handouts given.
- Activity 1: Modern “Sights and Sounds” worksheet, to be completed as initial homework assignment
- Activity 2: Model T photo scavenger activities, in class using pictures from the Benson Ford Research Center

Activity 3: Model T “Sights and Sounds”, to be completed as homework, requires Internet access

Activity 4: Henry Ford Museum Vehicle Inventory Activity, in class and will require Internet access

Duration: Two 90-minute block periods for this lesson (only part of a unit on the Industrial Revolution)

- Instructional Sequence:**
1. Students will be given the Worksheet titled “Sights & Sounds” and asked to complete it for homework.
 2. Beginning of first block period, the “Sights and Sounds” worksheet will be used to facilitate a discussion of the way we use the modern automobile as well as the sights and sounds associated with cars in general.
 3. This class discussion will lead us into an introduction to the exterior of the Model T. We will use photographs from the Benson Ford Research Center to complete the following activities.
 - a. In groups students will be given a set of photographs and asked to categorize them in anyway they wish. Each group will then share with the rest of the class.
 - b. Also in groups students will be asked to caption each of their photographs and share their best/favorite caption with the class (possibly post these on a bulletin board).
 - c. Individually, students will each take a photo and write down everything in the photo that is different then in a modern car. (They may wish to refer back to their completed “Sights and Sounds” homework paper).
 4. To conclude this first block period we will discuss the differences that students saw from part 3c above. This will lead into their homework assignment which will be to complete the “Model T: Sights & Sounds” worksheet (Internet required)
 5. Beginning the second block period we will discuss the videos that students watched for homework and their answers on the “Model T: Sights & Sounds” worksheet.

6. During the remainder of the class period we will explore some of the Henry Ford Museum using the online exhibit “The Automobile in American Life”. This activity (Handout) will require Internet access for groups or individuals. At the conclusion of the class period (or assign as homework) students will be asked to respond in writing to the lesson’s guiding questions: How are the Model T and the modern automobile connected? Student responses should include specific examples and reference to activities completed as homework or in class.

Sights & Sounds

Driving in a car is a transportation experience unlike any other---and with that experience comes, sounds, sights, smells, and experiences unlike any other! Cars have changed over time, and so has the world outside the car. Complete this form the next time you are a passenger in an automobile. **DO THIS ONLY WHEN YOU ARE A PASSENGER!**

I. Before you start driving...

Type of Car:

Date of Trip:

Color of the car exterior:

Color of the car interior:

Where are you sitting (front, back, etc)?

Weather:

Driver of Car:

II: Now, ask the driver to start the car...

WHAT DID YOU...

- 1. Hear when the car was started? (Turn down the radio!)**

- 2. Smell when the car was started?**

- 3. Feel when the car was started? (Physical sensations)**

**Listen to the car run for a moment.
Write down everything you think of
while you are listening.**

III. During the drive...

How fast was the car going?

What do you see out the front window?

What types of roads are you traveling? (Side streets, freeways, etc.)

What do you see out the side windows?

How does the car feel when it's moving?

What sounds do you hear as the car is being driven?

Estimate how many cars are driving around you.

What kinds of businesses do you pass? How many of these businesses have drive-thru's?

How many gas stations did you see?

How many times did you stop at stop lights?

MODEL T: Sights and Sounds

Now that you have examined the sights and sounds of the modern automobile, let's take a look at the Model T.

The Model T is quite different from modern automobiles, in the way it starts and also in how it drives. Henry Ford Estate Fair Lane has a great video that demonstrates just how different the Model T is.

Go to <http://www.henryfordestate.org/teaching.htm> and select the Centennial Video "How to Drive a Model T"

Answer the following questions as you watch.

1. Where is the gas tank located?
2. When was the Model T shown in the video built?
3. How do the tires in the video compare to modern tires?
4. How is the engine speed controlled in the Model T?
5. What are the three pedals on the floor?

Now watch the following two videos. One will show a Model T engine starting and running. The other will show a modern engine starting and running. More than watching, I want you to listen to the vehicles. What sounds do they make? How are they alike? How are they different? Write your answers in the space below.

http://www.youtube.com/watch?v=oA5Oq_ftkol&feature=related (Model T)

<http://www.youtube.com/watch?v=hVcU-Gl-LzU&feature=Playlist&p=107EA3C76DF6845F&index=17> (07 Mercedes Benz)

The Henry Ford Vehicle Inventory: Web quest!

1. Go to the Henry Ford museum website (<http://www.thehenryford.org/museum>)
2. Go to the Online Exhibit: The Automobile in American Life (<http://www.thehenryford.org/museum/automobile.aspx>)
3. Look at each of the cars in the exhibit, and fill in as many details as possible on the chart below.

<u>VEHICLE</u>	<u>COLOR</u>	<u>INTERIOR/PASSENGER SPACE</u>	<u>OUTSIDE FEATURES</u>	<u>INSIDE FEATURES</u>	<u>HOW IS IT DIFFERENT FROM MODERN VEHICLES</u>
15 Millionth Ford Model T Touring Car					
Tucker '48					
Ford 999 Racer					
Bugatti Royale Type 41 Convertible					
EV1					
Ford Mark IV Race Car					

Ford Mustang #1					
Old 16					
Vehicle of your choice:					



America's Greatest History Attraction

Middle School Lesson Plan 4

Marlene Sullivan, Mountain Oak School, Prescott, AZ

- Lesson Plan Title:** Thomas Edison and Henry Ford
- Grade Level:** 6-8 United States History
- Time Frame:** 55 minutes
- Objectives:** Students will:
Identify the contributions of Thomas Edison and Henry Ford to the changing social and political structure of the United States.
- Materials:** List of major or significant inventions of Thomas Edison
<http://www.thomasedison.com/Inventions.htm>
Article on Henry Ford's achievements
<http://fordlife.org/achievements.aspx>
T-Chart (one for each inventor)
- Learning Strategies:** Triad and whole class grouping, graphic organizer
- Procedures:** Teacher reviews life in the U.S. at the end of the Civil War (10 min.)

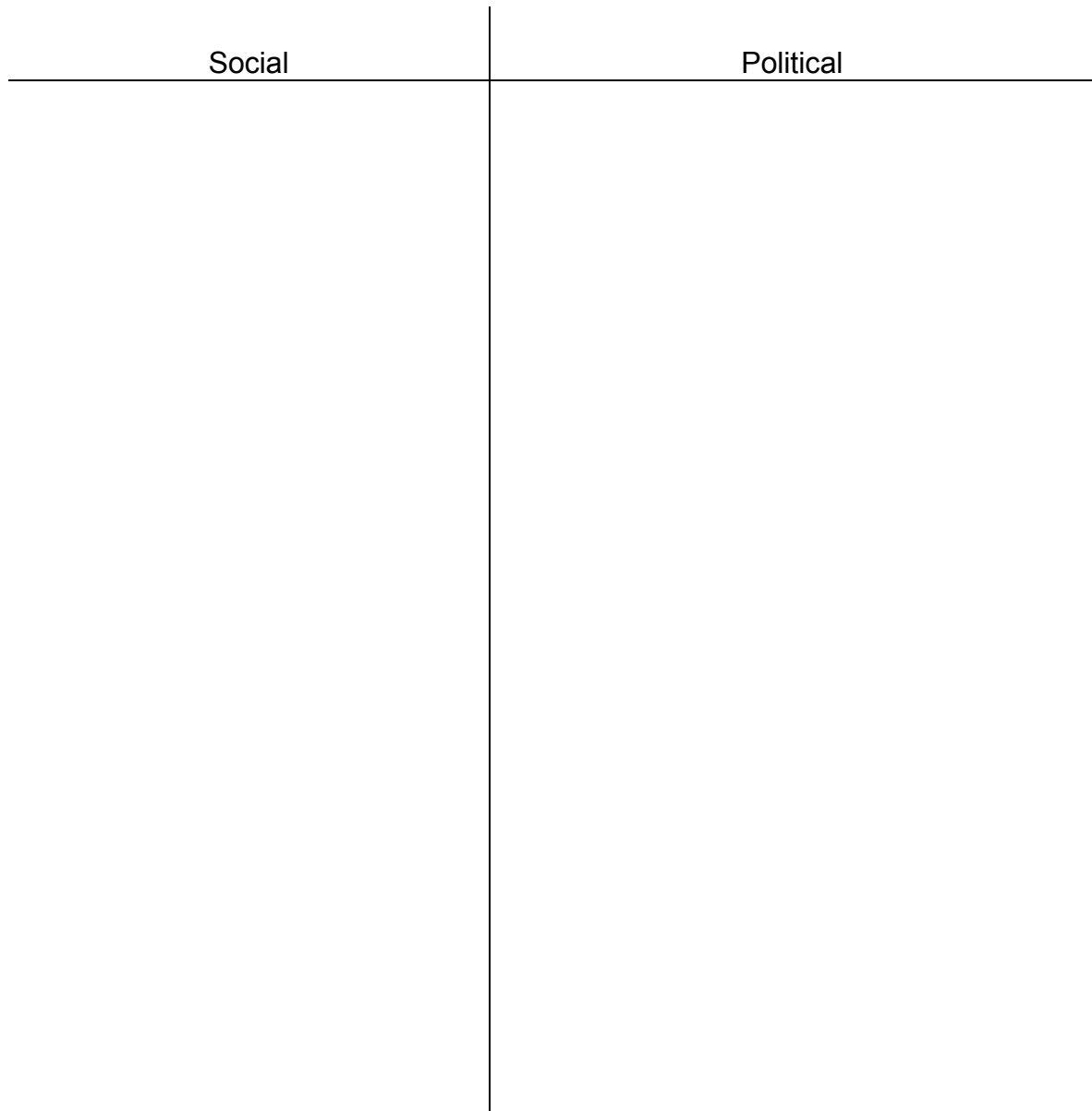
Group students, hand out documents and T-Chart (one set to each group)

Students will read and discuss documents (10 min.)

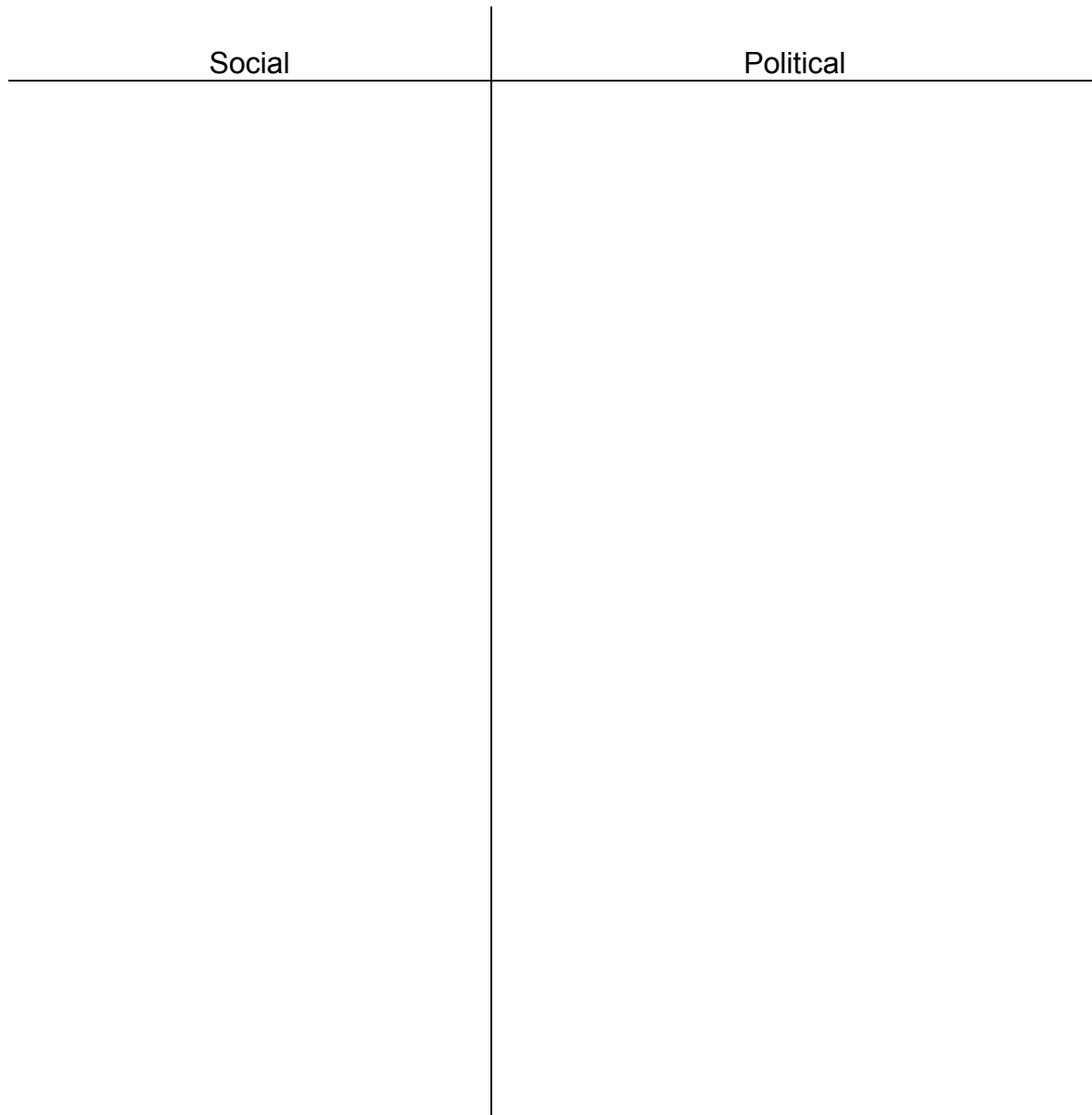
Using each inventor's T-chart, groups will record inventions that affected a social or political change (15 min.)

While still in groups, a whole class sharing of T-charts occurs (10 min.)
- Assessment:** Each student will select one innovation from their groups T-chart and provide a written reflection on how it affects their life today. (10 min.)

Thomas Edison



Henry Ford





America's Greatest History Attraction

Middle School Lesson Plan 5

Jane Wilson, Waltham Elementary, Utica, IL

- Lesson Plan Title:** Industrial Revolution in Illinois
- Grade Level:** 6th Illinois History
- Time Frame:** 3-5 days
- Objectives:** Students will:
Identify the contributions of Thomas Edison and Henry Ford to the changing social and political structure of the United States.
- Objectives:** The students will:
- Increase their knowledge of the Industrial Revolution
 - Research using various print and online resources
 - Focus on Industrial Revolution advancements as they occurred in Illinois
 - Work in groups to prepare a report or presentation
 - Present to the class
- Materials:** Illinois Adventure, classroom textbook
- <http://www.thehenryford.org/>
- <http://www.edison.rutgers.edu/>
- <http://www.hydepark.org/historicpres/ColumbianExp.htm>
- <http://www.illinoisaghistory.com/FarmEquipmentNW.htm>
- Other print and online sources
- Curriculum Links:** Illinois State Standards:
- 16.A.2c** Ask questions and seek answers by collecting and analyzing data from historic documents, images and other literary and non-literary sources.
- 16.A.3c** Identify the differences between historical fact and interpretation.

16.C.2b (US) Explain how individuals, including John Deere, Thomas Edison, Robert McCormack, George Washington Carver and Henry Ford, contributed to economic change through ideas, inventions and entrepreneurship.

16.C.3b (US) Explain relationships among the American economy and slavery, immigration, industrialization, labor and urbanization, 1700-present.

16.C.2c (US) Describe significant economic events including industrialization, immigration, the Great Depression, the shift to a service economy and the rise of technology that influenced history from the industrial development era to the present.

Procedure:

Preview prior knowledge of the Industrial Revolution and read the textbook on Inventors and innovators.

Depending on the size of the class, divide into 5 groups of 3-5 students. The five groups will be Steam Power, Electricity, Agriculture, Trains, and Water Transportation. Note: I would use a picture to represent each topic, cut it into the correct number of pieces and hand them out to the students randomly. They would find the correct matches to the pictures to form their groups.

Each group will research their Industrial Revolution topic and how this impacted Illinois History. Time will be given to do research in the library and computer lab.

Each group will research the inventors and the innovators connected to their topic.

Each group will decide how to present their information to the class. This could be done in a written report, PowerPoint presentation, or an oral presentation to the class.

Each group will have 15-20 minutes to present their information to the class.

Assessment:

The written report should be 3- 5 pages. The PowerPoint or the oral presentation should be 15-20 minutes in length.

Each presentation should represent the combined effort of the group.

Each presentation should include the inventions, the people, the locations and their impact on Illinois history.

Each teacher should use a rubric they are comfortable with to assess the work of their students.



America's Greatest History Attraction

Middle School Lesson Plan 6

Michelle Dulaney, Howardsville Christian School, Marcellus, MI

Lesson Plan Title:	Ford's Assembly Line: Transportation Transformation
Grade Level:	7 th
Time Frame:	One class period
Overview:	This lesson discusses the development and dramatic impact of Henry Ford's assembly line on a progressing America.
Central Question:	What caused the transportation transformation?
Learning Objectives:	Students will... <ol style="list-style-type: none">1. understand the history and steps of development of the assembly line.2. understand the impact of standard, interchangeable parts and the assembly line on transportation.3. understand how specialization and division of labor increase productivity.
Assessment Tools:	Student understanding will be assessed by a John Collins Type II writing assignment.
Key Concept:	Assembly line development
Evidence/Sources:	<p>Pictures from Bob Casey's NEH 2009 Lecture: "Winding the mainspring of the 20th century, The Development of the Assembly Line".</p> <p>Cross & Szostak (1994) Ch.'s 14 and 15. <u>Technology and American Society</u>, p.220-222, Upper Saddle River: Prentice Hall, Inc.</p> <p>The Life of Henry Ford) http://www.thehenryford.org/exhibits/hf/default.asp</p>

The Ford Rouge Complex: A Case Study In Industrialization-
-Curriculum Connector

<http://www.thehenryford.org/rouge/eduResources/caseStudyIndustrialization.pdf>

Instructional Sequence: Fill in the blank lecture notes

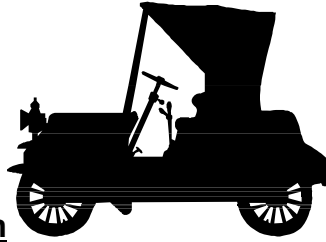
Group/individual picture activity

Quiz-John Collins Type II

Student Project Idea: Picture activity included in sequence.

Anticipated Challenges: This lesson plan addresses the misconception that Henry Ford invented the first car and the idea that the assembly line was an idea that happened successfully overnight!

Name: KEY



Ford's Assembly Line: Transportation

Transformation

1863-Henry Ford born on **farm** in **Dearborn**, MI

1879- Sixteen-year-old Henry Ford leaves Dearborn for **Detroit** to work as a **mechanic** apprentice

1891- Henry Ford, now married, becomes an engineer at the **Edison** Illuminating Company in **Detroit**.

1893- Henry Ford promoted to Chief **Engineer** and now has time and money to work on his personal interest, the **internal combustion** engine.

1896- Henry Ford builds his first **Quadricycle**.

*Henry Ford was **not the first** to build a car, but he was one of the innovative automotive pioneers that would transform the country!

*The Quadricycle had a **gasoline** engine, four bicycle-like wheels, steered with a boat like **tiller**, and only went **forward** in **2** speeds.



Henry Ford on the Quadricycle, 1905
Photo: P.O. 490-thehenryford.org

1903- Henry Ford opens the **Ford Motor Company** on Mack Avenue in **Detroit** after two **failed** attempts.

*Groups of **two** to **three** men assembled car **parts** that were produced by **other** companies.

1908- Henry Ford introduces the **Model T**.

*Why is it called the **Model T**? The Ford models went through many changes beginning with the Model **N**. The Model **S** went through a major **overhaul** thus giving us the **Model T**.

*Henry Ford wanted to produce a car that was **affordable**, **reliable**, and **efficient** and the Model T accomplished that! It was also fairly easy to **drive**, take **care of**, and could handle the rough **roads** of the day.



Henry Ford with his Model T (Photo P.O. 3015A
Museum D31384)



Model T (Henry Ford
Museum D31384)

(Photos from thehenryford.org)

1913- Ford engineers introduce a **moving assembly line** for auto production

*Ford conducted **time and motion** studies to develop the best **method**, rate of speed of the **conveyer** belt, **height** of work stations, and worker **placements** for maximum **efficiency**.

***Moving Assembly Line**(def)-Production method pioneered by Henry Ford in which parts are moved **to the worker** rather than the worker to the parts to produce an automobile.

*Principles of the Ford assembly Line:

1-**Moving Assembly Line** (def)-Workers perform only one or a few of many steps in a production process.

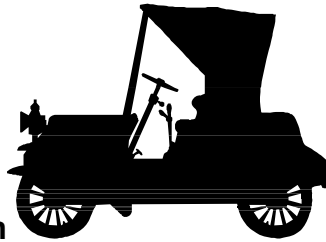
2- **Interchangeable Parts**-Popularized in America by Eli Whitney, parts were standardized and therefore could be mass produced for ease of production. Interchangeable parts also meant parts would be easier to replace by the consumer.

3-**Specialized machines** for each work station

4-Elimination of the many **workers** needed to bring parts to the assembler. Fewer workers resulted in a lower production cost. The lower cost of production made the Model T more affordable to middle class America.

1918- **Half** of all cars in America were **Model T's!**

Name: _____



Ford's Assembly Line: Transportation Transformation

1863-Henry Ford born on _____ in _____, MI

1879- Sixteen-year-old Henry Ford leaves Dearborn for _____ to work as a _____ apprentice

1891- Henry Ford, now married, becomes an engineer at the _____ Illuminating Company in _____.

1893- Henry Ford promoted to Chief _____ and now has time and money to work on his personal interest, the _____ engine.

1896- Henry Ford builds his first _____.

*Henry Ford was _____ to build a car, but he was one of the innovative automotive pioneers that would transform the country!

*The Quadricycle had a _____ engine, four bicycle-like wheels, steered with a boat like _____, and only went _____ in _____ speeds.



Henry Ford on the Quadricycle, 1905
Photo: P.O. 490-thehenryford.org

1903- Henry Ford opens the _____ on Mack Avenue in _____ after two _____ attempts.

*Groups of _____ to _____ men assembled car _____ that were produced by _____ companies.

1908- Henry Ford introduces the _____.

*Why is it called the _____? The Ford models went through many changes beginning with the Model **N**. The Model **S** went through a major _____ thus giving us the _____.

*Henry Ford wanted to produce a car that was _____, _____, and _____ and the Model T accomplished that! It was also fairly easy to _____, take _____, and could handle the rough _____ of the day.



Henry Ford with his Model T (Photo P.O. 3015A
Museum D31384)



Model T (Henry Ford
Museum D31384)

(Photos from thehenryford.org)

1913- Ford engineers introduce a _____ for auto production

*Ford conducted _____ studies to develop the best _____ of speed of the _____ belt, _____ of work stations, and worker _____ for maximum _____.

*_____ (def)-Production method pioneered by Henry Ford in which parts are moved _____ rather than the worker to the parts to produce an automobile.

*Principles of the Ford assembly Line:

1-_____ (def)-Workers perform only one or a few of many steps in a production process.

2-_____ -Popularized in America by Eli Whitney, parts were standardized and therefore could be mass produced for ease of production. Interchangeable parts also meant parts would be easier to replace by the consumer.

3-_____ for each work station

4-Elimination of the many _____ needed to bring parts to the assembler. Fewer workers resulted in a lower production cost. The lower cost of production made the Model T more affordable to middle class America.

1918- _____ of all cars in America were _____!

A Picture is worth a Thousand Words

Picture A:



Picture B:

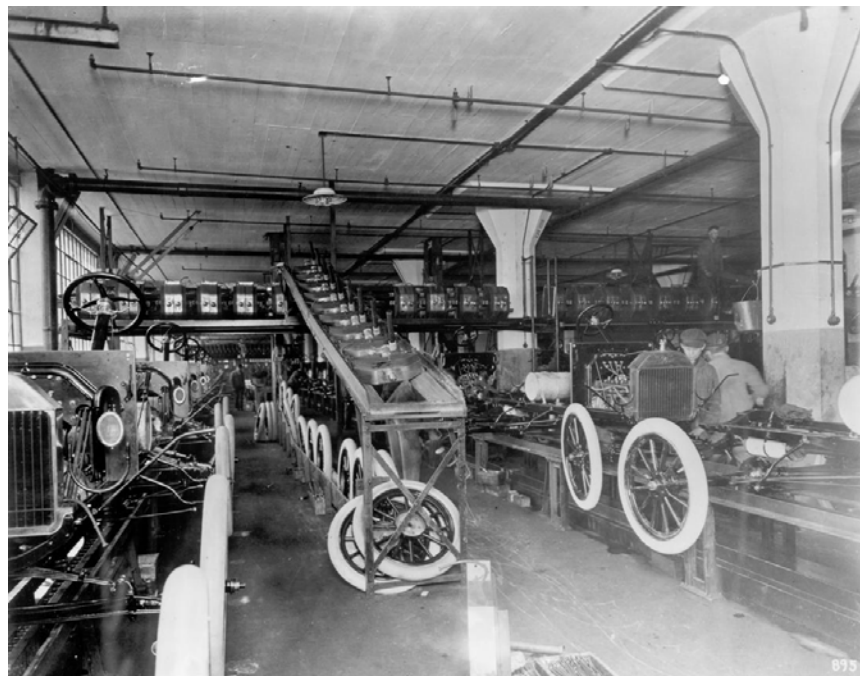


A Picture is Worth a Thousand Words

Picture C:

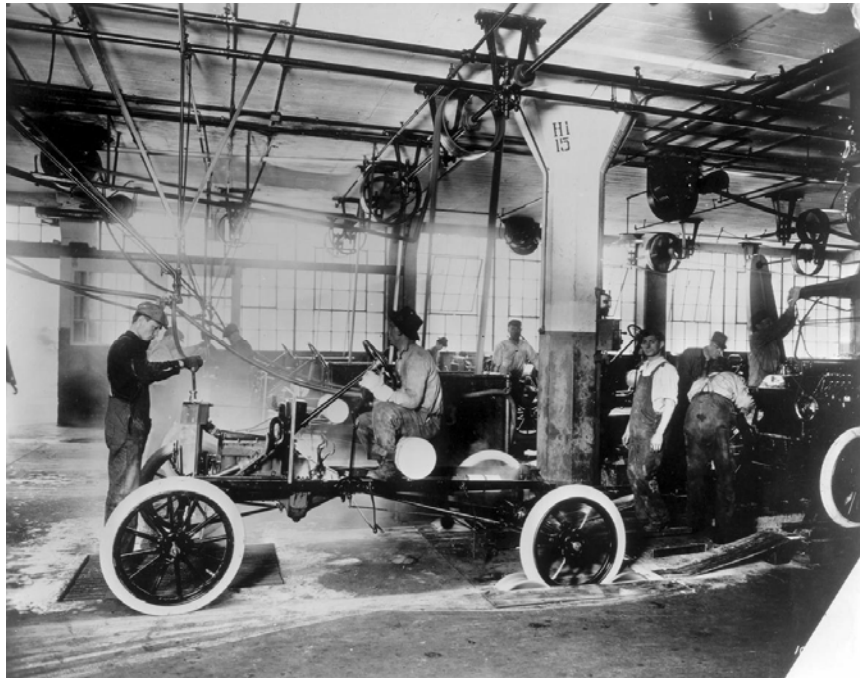


Picture D:

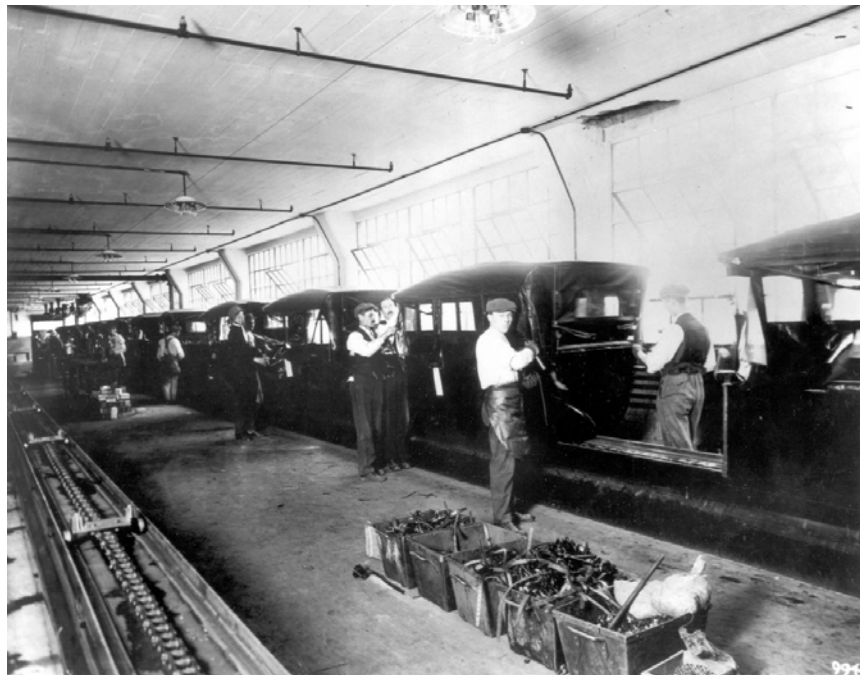


A Picture is worth a Thousand Words

Picture E:



Picture F:



Name: Key

A Picture is worth a Thousand Words

Picture A: Disassembly line for hogs, 1915

The meatpacking business was around long before Henry Ford's assembly line and Henry Ford did see some "inspiration" in the process. Look at Picture A, what could Ford have seen that would be put to use in his automotive business?

Students should see the assembly line process. Note the worker standing in the same place while the meat is carried to them on a conveyer system.

Picture B: Assembly line for magnets on Model T flywheels, 1913

The first product that Ford investigated the efficiency of the assembly line was the flywheel. The Flywheel's purpose is to generate electricity that fires the spark plug. Look at Picture B, describe what methods of efficiency were used in this assembly line? Note the placement of the equipment.

Students should note that the worker's hand is in a bin, he is not looking at it because he knows all the parts in that bin are the same. Note the parts bin, and its location to the worker. This is a good time to point out that the slow workers would be forced to speed up and fast ones to slow down enabling the company to control production. Students may also note such things as the height of the bin for the hand and the product being assembled is about eye sight.

Picture C: Model T chassis assembly line, installing gas tanks, 1914

Look at this picture and identify the location of the moving conveyer belt. Can you find where the already assembled gas tanks are coming into the factory?

Students should find the conveyer belt is moving the chassis and the gas tanks are coming in from the window on the mid-upper left side of the photo. Point out the worker.

Picture D: Model T chassis assembly line, installing wheels and radiators, 1914

Can you identify the conveyer belt for the radiators? What other efficient methods can be seen?

Students should find the radiators coming down the ramp on the conveyer belt.

Picture E: Model T chassis assembly line, starting the engine, 1914

Model T's were actually shipped without the bodies. Now look at the picture, what does the man on the left appear to be adding to the engine (hint: radiator)? Can you tell what this Model T touring car is being moved on?

Water is being added by the man on the left and rollers are moving the car.

Picture F: Assembly line installation of tops on Model T bodies, 1915

Can you find

The first bodies were made by a man whose last name was Briggs. Briggs was the first owner of the Detroit Tigers? Can you find the chain for the assembly line on the left of the photo? What do these men appear to be doing to the bodies?

Chain is on bottom left, and the men are in fact painting and adding fabric.

Name: _____

A Picture is worth a Thousand Words

Picture A: Disassembly line for hogs, 1915

The meatpacking business was around long before Henry Ford's assembly line and Henry Ford did see some "inspiration" in the process. Look at Picture A, what could Ford have seen that would be put to use in his automotive business?

Picture B: Assembly line for magnets on Model T flywheels, 1913

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Picture F: Assembly line installation of tops on Model T bodies, 1915

Can you find

The first bodies were made by a man whose last name was Briggs. Briggs was the first owner of the Detroit Tigers. Can you find the chain for the assembly line on the left of the photo? What do these men appear to be doing to the bodies?

What would be some of the benefits of an assembly line...
...for the worker?

...for the employer?

What would be some of the down sides of an assembly line...
...for the worker?

...for the employer?

Name: _____

Henry Ford Assembly Line Quiz

*This quiz is worth ten points and is graded on content.- John Collins Writing Type II.

1. Summarize the significance of the following steps in the Henry Ford's transportation transformation.
 - a. Henry Ford develops the Model T and wants it to be affordable. (2 points)

 - b. Henry Ford studies the affects of the assembly line on the flywheel. (2 points)

2. Describe the principles of the Ford Assembly Line. (4 points)

3. What is "division of labor"? (1 points)

4. What is the significance of the interchangeable parts and the assembly line? (1 point)



America's Greatest History Attraction

Middle School Lesson Plan 7

Daria Neal, University Prep Science and Math Middle, Detroit, MI

- Unit Title:** Industrial Revolution Technology: Help or Harm?
- Grade Level:** Middle School (US History or World History)
- Time Frame** 12-23 days
- Overview:** For this unit, all students will be tracing the progress of growth by investigating one chosen piece of technology that was introduced between 1750 and 1880. Students have the opportunity to select several different ways to demonstrate their research skills, understanding of the technology, analysis of the impact of the technology's introduction and evaluate if the introduction of this technology HELPED or HARMED citizens by judging its overall impact.
- Central Question:** How did the Industrial Revolution change (or REVOLUTIONIZE) daily life? Specifically, explain how ONE piece of technology introduced between 1750 and 1880 alter the means of production, consumption and distribution of goods once it was adopted? Were these changes good or bad?
- Learning Objectives:** Students will be able to
- select a labor saving device and describe the changes that the selected piece of technology provided in one industry (agriculture, food production, communication, metallurgy, textile, transportation)
 - Trace the development of the technology using a timeline showing the introduction and major improvements or events linked to this piece of technology
 - Use graphics (charts, graphs, maps and pictographs) to demonstrate the impact of adopting the technology the industry by comparing and contrasting one selected element of the industry

- Persuade potential users of the technology of the benefits of the device and/or technological innovators¹

Assessment Tools: K-W-R-L chart and entries, intermediate products check-ins, final products, evaluation of oral/aural or other presentations.

Key Concepts: Technology created changes in different industries in different ways

Change within the Industrial Revolution was gradual rather than immediate

Changes had a beneficial AND deleterious effect

Evidence/ Sources: In addition to US History texts, the unit includes by site visits, on-line research and supplemental materials including journals, historical fiction (such as the American Girl series) depending on team teaching options including Math, Science and/or Language Arts instructors.

Physical Sites (South East Michigan)

The Henry Ford – Greenfield Village (Dearborn, MI)

Charles H. Wright Museum of African American History (Detroit, MI)

Detroit Historical Society (Detroit, MI)

Southern Michigan Railroad Museum (Clinton, MI)

R.E. Olds Transportation Museum (Lansing, MI)

Troy Museum and Historic Village (Troy, MI)

Washtenaw County Historical Society (Ann Arbor, MI)

On-line Sources (based on The Henry Ford History Hunters ©)

www.TheHenryFord.org/education

- Model T. Road Trip Interactive Module
- The Rouge: An Overview PowerPoint Show
- Henry Ford’s Innovations at the Rouge PowerPoint Show

¹See attached Industrial Revolution Student Project Description for specific products and project choices.

- Colonial Family and Community Interactive Module
- Living Under Enslavement at Hermitage Plantation Interactive Module
- Toys Online Exhibit

Anticipated challenges: Often, the Industrial Revolution is presented as a sweeping change that affected all Americans equally and immediately. To the contrary, the Industrial Revolution occurred over a long period of time during which there were several cumulative small steps. Each step led to more and more improvements in the technology that resulted in what became huge leaps on the impact of American’s lives.

Curriculum Links: Michigan Middle School GLCEs (National Geography Standards are referenced after expectations where appropriate.)

USHG ERA 6 – THE DEVELOPMENT OF AN INDUSTRIAL, URBAN, AND GLOBAL

UNITED STATES (1870 – 1898 in Grade 8)

6.1 America in the last half of the 19th Century (introduced in Grade 8; begins high school USHG)

6.2 Policy Issues in USHG Eras 3-6 (P2)

*Geography, Civics and Government, and Economics are integrated into the historical context.

U6 USHG ERA 6 – THE DEVELOPMENT OF AN INDUSTRIAL, URBAN, AND GLOBAL UNITED STATES (1870-1930)

Grade 8 begins to address trends and patterns in the last half of the 19th century, through 1898.

U6.1 America in the Last Half of the 19th Century

Analyze the major changes in communication, transportation, demography, and urban centers, including the location and growth of cities linked by industry and trade, in last half of the 19th century. The purpose of this section is to introduce some of the major changes in American society and the economy in the last part of the 19th Century. This era is expected to be addressed in-depth and with greater intellectual sophistication in the high school United History and Geography content expectations².

² Michigan Grade Level Content Expectations for Middle School Social Science (Michigan Department of Education).

8 – U6.1.1 America at Century's End – Compare and contrast the United States in 1800 with the United States in 1898 focusing on similarities and differences in³

- territory, including the size of the United States and land use (National Geography Standards 1 and 16, pp. 144 and 196)
- population, including immigration, reactions to immigrants, and the changing demographic structure of rural and urban America (E3.2) (National Geography Standards 9 and 12, pp. 160 and 167)
- systems of transportation (canals and railroads, including the Transcontinental Railroad), and their impact on the economy and society (E1.4, 3.2) (National Geography Standard 11, p. 164)
- governmental policies promoting economic development (e.g., tariffs, banking, land grants and mineral rights, the Homestead Act) (E.2.2) (National Geography Standard 16, p. 176)
- economic change, including industrialization, increased global competition, and their impact on conditions of farmers and industrial workers (E1.4, 2.1, 3.2) (National Geography Standard 11, p. 164)
- *the treatment of African Americans, including the rise of segregation in the South as endorsed by the Supreme Court's decision in Plessy v. Ferguson, and the response of African Americans*
- *the policies toward American Indians, including removal, reservations, the Dawes Act of 1887, and the response of American Indians (National Geography Standard 13, p. 169)*

U6.2 Investigation Topics and Issue Analysis (P2)- Use the historical perspective to investigate a significant historical topic from United States History Eras 3-6 that also has significance as an issue or topic in the United States today.

³ Items in italics may or may not be addressed depending on the
2009 NEH Landmarks of American History Workshop for School Teachers
America's Industrial Revolution at The Henry Ford

8 – U6.2.1 United States History Investigation Topic and Issue Analysis, Past and Present –Use historical perspectives to analyze issues in the United States from the past and the present; conduct research on a historical issue or topic, identify a connection to a contemporary issue, and present findings (e.g., oral, visual, video, or electronic presentation, persuasive essay, or research paper); include causes and consequences of the historical action and predict possible consequences of the contemporary action. (National Geography Standards 9 and 10, pp. 160 and 162)

Skills instruction:

To ensure students are able to complete the project products successfully, instructors should ensure that all students can complete the several tasks effectively. You may have already taught many of the requisite skills throughout the year prior to this unit. Some instructors find that co-teaching or team teaching several of the skills is effective. Other grade level teams find that using this type of project lends themselves to a cross-curricular approach in which several components of the project are assessed. A “day” is a class session.

Skills/Tasks	Team Teaching areas	Approximate days to teach this skill ⁴
<p>Use Internet Search engines to locate information</p> <p>Evaluate results of internet searches to ensure that the information is relevant and trustworthy</p> <p>Identify elements of a good persuasive piece (ex: pamphlet, advertisement, commercial)</p> <p>Create a written or oral persuasive piece using technology (ex: pamphlet, advertisement, commercial)</p>	<p>Social Science</p> <p>Business Education/</p> <p>Computers/ Media Arts</p> <p>Language Arts</p>	1-4
<p>Select relevant information from a variety of sources</p> <p>Summarize and paraphrase relevant information</p> <p>Create MLA style citations and bibliography</p> <p>Identify elements of memoirs and journal writing</p> <p>Write a journal</p> <p>Use examples and details to support a given thesis statement*</p>	<p>Social Science</p> <p>Language Arts</p>	3-5
<p>Read bar graphs and evaluate the information included</p> <p>Read line graphs and evaluate the information included</p> <p>Read pie graphs and evaluate the information included</p> <p>Read pictographs and evaluate the information included</p> <p>Read charts and evaluate the information included</p> <p>Create accurate bar graphs from information gathered</p> <p>Create accurate line graphs from information gathered</p> <p>Create accurate pie graphs from information gathered</p> <p>Create accurate pictographs from information gathered</p> <p>Create accurate bar graphs from information gathered</p>	<p>Social Science</p> <p>Mathematics</p>	2-4
<p>Read timelines and evaluate the</p>	<p>Social Science</p>	2-4

⁴ For students with no prior knowledge.

information included Create accurate timelines from information gathered Use scale appropriately when reading maps Use scale appropriately to create/evaluate schematics*	Mathematics	
Read a political map and evaluate the information included Read a special purpose map and evaluate the information included Create an accurate special purpose map from information gathered Read a blueprint or other technical schematic Use scale appropriately to create/evaluate schematics* ⁵	Social Science Science	1-3

Project instruction: Below is a suggested timeline for introducing the Industrial Revolution Student Project. A “day” is a class session.

Anticipatory Set/ Prior Knowledge	Direct instruction of content	Student Research (includes time at Greenfield Village)	Organizing information ⁶	Student project completion and presentation	Evaluation
1-2 days	2-3 days	3-6 days	3-6 days	2-4 days	1-2 days

⁵ Items noted with an asterisks (*) are skills that are needed for one of the optional project products on Tier 3.

⁶ The Student Research time and Organizing information time may be more fluid. There will probably be overlap between these two components of the project.

Industrial Revolution Project Description

Often, the Industrial Revolution is presented as a sweeping change that affected all Americans equally and immediately. To the contrary, the Industrial Revolution occurred over a long period of time during which there were several cumulative small steps. Each step led to more and more improvements in the technology that resulted in what became huge leaps on the impact of American's lives.

For this unit, all students will be tracing the progress of growth by investigating one chosen piece of technology that was introduced between 1750 and 1880. Students have the opportunity to select several different ways to demonstrate their research skills, understanding of the technology, analysis of the impact of the technology's introduction and evaluate if the introduction of this technology HELPED or HARMED citizens by judging its overall impact.

Step One: Select an area to investigate.

Agriculture⁷ Food Production Communication Metallurgy Textile
Transportation

Step Two: During your site visit to Greenfield Village⁸ and/or using your own research, select one piece of technology to investigate.

Step Three: Review the chart below with your instructor. You MUST complete ALL of the activities on Tier One. You can choose one activity on Tier Two to complete. To earn an extra 10% overall on this project, select ONE Tier Three activity to complete. The Tier Three activities are NOT required; however, successful completion of one Tier Three activity will earn extra credit. You may NOT complete more than one Tier Three activity NOR may you complete Tier Three activities INSTEAD of the mandatory Tier One and Tier Two activities.

⁷ Please note, Agriculture refers to the process of growing items for use, whether they be food item or items for other use (ex: tobacco, corn – an animal feed at this time). Food production is specifically tied to processes of taking items and preparing them to be consumed as food by humans (ex. Butchering, milling grains).

⁸ Site visit to Greenfield village will group students based on her/his area selection. Agriculture and Food Production sites include Daggett farm, Susquehanna Plantation, Firestone Farm and Gunsolly Carding Mill, Loranger Gristmill, Luther Burbank Garden Office, George Washington Carver site, Soybean Experimental Laboratory. Transportation and Communication sites include Tripp Sawmill, Spotford Sawmill, Menlo Park, The Detroit, Toledo & Milwaukee Roundhouse, Wright Cycle shop, Richart Wagon shop, Model T, Weiser Railroad and Omnibus Rides. Textile and Metallurgy sites include Daggett farm, Gunsolly Carding station, Weaving shop, Hermitage Slave Quarters, Armington and Sims and Post Office and Tin shop. Instructors unable to visit Greenfield Village should review the online investigations listed at the end of the project description to determine which activities would be best suited.

Industrial Revolution Project for 8th Grade Humanities Selection Menu

	Activity Description	Student Selection/Comments
TIER ONE Must complete all	<ul style="list-style-type: none"> <li data-bbox="344 310 1040 449">☐ Describe the work that the piece of technology does. Who would use it and in what context (ex: farmers, housewives, skilled technicians) <li data-bbox="344 457 1040 596">☐ Trace the development of the technology using a timeline showing the introduction and major improvements or events linked to this piece of technology <li data-bbox="344 604 1040 716">☐ Determine the relative cost of the item (compare the cost at the time to average monthly or annual wages) <li data-bbox="344 724 1040 926">☐ Create a graphic (line graph, pie graph, bar graph, map or pictograph) that demonstrates the impact of adopting the technology the industry. For example, if you chose the Cotton Gin; create a line graph showing the production of cotton from 1750 to 1880. 	

	Activity Description	Student Selection/Comments
TIER TWO Select One	<ul style="list-style-type: none"> <li data-bbox="345 275 1036 449">□ Write a realistic journal including at least 8 entries of a person who would have used this technology. At least two entries must have been “written” before the technology was adapted. <li data-bbox="345 457 1036 856">□ Create a three-dimensional “Museum Installation” for your piece of technology. Alternatively, you may use the Henry Ford website to create a virtual “Museum Installation.” The installation must include a written explanation of the work comparing how the tasks were done PRIOR to the technology and AFTER the technology. The installation must also include visual artifacts (pictures, technical drawings, videos) explaining how the technology worked. <li data-bbox="345 865 1036 1073">□ Create a “sales pitch” in the form of an oral presentation or pamphlet to “sell” this piece of technology to a potential client. Make sure to discuss how this purchase will enhance their quality of life. Include a realistic presentation of the “before” <li data-bbox="345 1081 1036 1442">□ Create a monument for an unsung hero/heroine of the Industrial Revolution. Include 4-5 biographical facts and a 2-3 paragraph discussion explaining her/his impact on the Industrial Revolution. Include 2-3 visual artifacts (drawings, pictures, videos, copies of letters/speeches/ quotes) that underscore the impact s/he had. Create a welcome pamphlet or oral/video loop to be played for visitors upon their arrival. 	

	Activity Description	Student Selection/Comments
TIER THREE Optional for 10% extra Credit	<ul style="list-style-type: none"> ➤ Create a speech/pamphlet to the Luddite movement encouraging their position. Use well researched and noted sources, charts and graphs discussing the impact of 1 to 2 pieces of technology over a 50 year period. Keep in mind the Luddites were AGAINST many advances in technology, so your information must describe the negative impact of the technology. ➤ Write a well researched position paper with complete bibliography in MLA format. Prove the thesis – “Technology adopted during the Industrial Revolution led to more class distinctions”. Make sure to include descriptions, definitions, treatments and opportunities for working class, middle class and skilled labor. ➤ Create a working model of the technology studied based on research and examples. You MAY (for an additional 5% extra credit) include necessary improvements with an explanation. Demonstrate the model in class. 	



America's Greatest History Attraction

Middle School Lesson Plan 8

Oveta Scott, Fred Lynn Middle School, Woodbridge, VA

Unit Title:	America & The Model T
Grade Level:	Middle School (US History or World History)
Time Frame	6-8 Social Studies
Overview:	This unit America & the Model T will analyze the impact of the automobile, which depending on time and schedule can take from 2 -3 days to complete this lesson.
Unit Goals:	Students will be able to demonstrate knowledge of how social and economic life changed in the early twentieth as a result of improved transportation brought about by affordable automobiles.
Student Profile:	This lesson is for middle grades with a mix of intermediate and low students.
Unit Objectives:	<ol style="list-style-type: none">1. The students will be to recognize how Henry Ford's Model T and the use of the assembly line created an improved automobile industry.2. The students will be able to examine how the automobile led to the growth of other transportation related industries.3. The students will be able to examine how the automobile industry led to the creation of jobs and greater mobility for Americans.
Assessments:	There will be oral and written material given to the students to observe mastery of the lesson. There will be brief reviews of each lesson before proceeding to the next lesson to ensure understanding.
Re-teaching:	The lesson will be presented in a pace that each student will be able to grasp. There will be a review of the previous lesson before the start of new material. At the end of each lesson the students will orally reflect on the material that was discussed.

Instructional Sequence: Day One

Objective: The students will be able to recognize how Henry Ford's Model T and the use of the assembly line created an improved automobile industry.

Anticipatory Set: As a whole group, have students create a KWL chart on Henry Ford/the automobile. (Use this to open up the conversation and obtain background knowledge)

Explain

Discuss with students Henry Ford and his accomplishments for developing the Model T and how the assembly line impacted the production process with a power point presentation (part one, slides 1-8). Have students to use a character web to highlight important fact.

Video

Have students watch United Streaming video on Henry Ford (Discovery History 20th century biographies: Prominent Americans 5 min long) only the segment on Ford. Have students to take any notes on the back of the character web while watching the video

Enrichment Activity

Have students get into groups of five to six to perform an simulation of an assembly line. Students are to put together paper car, the first group to put together the most cars in the time allowed wins a prize (optional).

Wrap Up/Assessment

On a sheet of line paper, have the students address the following questions in their group to share with the class:

1. What was Ford's vision? How did he achieve it?
2. Why was the Model T the most successful automobile?
3. How did the assembly line change impact production and Ford's vision?

Day Two:

Objective: The students will be able to examine how the automobile led to the growth of other transportation related industries, greater mobility, and the creation of jobs in America.

Anticipatory Set: Using a spider web organization chart, as a whole class have students tell what industries are dependent upon the automobile.

Explain

Have students examine a brief PowerPoint (part two, slides 9-13) on industries that grew from the automobile and how it led to the creation of jobs. Have students compare to the spider chart discussed earlier.

Video

Have students watch United Streaming video – History of Transportation: Automobiles and Trucks (19 min long)

Enrichment Activity

Have students get into groups of 5 or six to create a newspaper front page headline or advertisement for jobs. Each group will be given an industry that is impacted by the automobile and one group will create a headline announcing jobs at the Ford Rouge Plant.

Wrap Up/Assessment

On a sheet of line paper, have the students address the following questions in their group to share with the class:

1. How did the automobile impact Americans socially and economically?
2. What are the industries related to the automobile?

Day Three

Objective: The students will be able to demonstrate knowledge of the economical and social impact of how the automobile changed America.

Anticipatory Set: As a whole group, have students complete a T-Chart on the automobile then vs. now. Have students give as many responses on the use in the past and how it has evolved in the present.

Review

Using the entire Power Point, review with the entire class the lesson on the automobile, emphasizing whole group discussion on the key objective points of the economical and social impact.

Assessment

Have students write an essay on identifying how the automobile impacted Americans in the 20th century. Encourage students to include details about Henry Ford and his vision, the economical and social change that occurred.



America's Greatest History Attraction

Middle School Lesson Plan 9

Paul Olson, Lacier Creek Middle School, Cross Plains, WI

- Title:** Steam!
- Grade level:** 7
- Overview:** This activity will demonstrate the advantage of using steam power over muscle power.
- Central Question:** What advantages does a steam engine have over muscle power?
- Objective:** Have the students realize how difficult it was prior to the age of steam to do ordinary tasks and how that fact restricted the movement and industrialization have the country.
- Anticipated Outcome:** The students will be challenged physically in competitions between themselves and the steam engine. They will then write an essay about their experience.
- Materials Needed:** Handsaw and a 2X4 per class
Treadmill - 2
Toy Steam engine – Wilescos D18 with generator (\$300)
- Instructional Sequence:**
1. Students will do a reading on steam power the day before (TBD) Textbook?
 2. Teacher hands out copies or shows on overhead of the journal questions that need to be answered. Read and discuss.
 3. Teacher asks for volunteers: one to use a handsaw to saw a board and 1 to walk on a treadmill (2) to simulate a horse and 5 to simulate water power used to cut a board.
 4. Teacher times the students as they cut through the board doing it as fast as they can safely accomplish the cut. Horsepower and waterpower walk/ run on treadmill trying to equal a horsepower with the horsepower and water people taking turns. One horsepower = 746 watts
 5. After 15 minutes fire up the steam engine and simulate cutting wood. Use the M60m Hacksaw attachment. (\$25) Follow safety precautions.

6. Teacher hands out or shows on the overhead the comparison questions.

Assessment:

Students will journal their answers to the “thinking about” questions provided.

Journal questions to be answered while demonstrations are going on:

Why did people look for other sources of power?
Rank each power source in terms of portability?
Which power source is the technically most difficult to achieve?
What was the energy source for the human? For the Horse? For the water?
For the steam engine?
Which would cost more to operate?
Which will have the greater endurance?
What advantages does the steam engine have over the human or horse muscle?
In what ways can the steam engine be used besides sawing?
Which power source has the longest lifespan?
What are the negative aspects to each of the power sources (list 3)?
What are the positive aspects to each source (list 3)?

Homework:

Respond to this statement in an essay using your observations and journal entries:
Steam power was a revolutionary power source and brought about huge changes in society.

Evidence/Sources:

Teacher notes:

James Watt promoted the term ‘horsepower’ as a marketing ploy for his steam engines.

A horsepower is equal to 745.7 watts. It would be difficult however for a horse to sustain that amount of output over a long period of time.

For humans, we can produce short bursts of up to 1500 watts using a human powered generator (a motor with bicycle pedals attached). That’s the equivalent to about 2 horsepower for a very short duration (less than a minute?).

Humans can't sustain that speed. It is far more likely that we'd drop down to about 200 watts or even less than 100 watts for a very long period (more than a few hours).

Human Power is roughly equal to 0.1 horsepower over a sustained period. It's estimated that just by walking, we could harvest 67 watts of energy.

<http://sensorymetrics.com/tag/human-power/>

How Steam Technology Works

By Robert Lamb

To witness the incredible power of steam, you don't have to look any further than the eruption of geysers or the explosion of gasses that occurs when lava reaches the ocean. Early man witnessed such sights and has long sought to control the raw power of steam through technology ranging from the basic tea kettle to the modern nuclear power plant.

Regardless of the level of technology involved, steam power comes down to one basic principle: When water is heated to the point of vaporizing, the vaporized water takes up more space than the liquid water did. Different levels of molecular forces because solids, liquids and gases are each hold this together. In solids, the molecules are compact. In liquids, they're further apart. And in gasses, like steam, they're even further apart.

If you heat a can of soup in a fire, the liquid contents will vaporize and eventually expand to the point where the can will explode to release the pressure inside. When this pressure is used to perform a particular task -- like turning a turbine or causing a kettle to whistle -- steam technology is harnessing steam power. The methods of heating, containing, channeling and using steam have changed, but the basic principle remains the same.

Learning to harness the power of steam has been a long process. Greek mathematician Hero theorized the use of steam technology in the second half of the first century. However, it would be well over 1,600 years before the first practical steam engine was created in order to drain water from mines and gardens. The age of steam that followed shaped the course of history by powering the Industrial Revolution, transforming the global shipping industry and revolutionizing modern warfare.

<http://science.howstuffworks.com>

Even more interesting is how the definition came to be. It was originated by James Watt, (1736-1819) the inventor of the steam engine and the man whose name has been immortalized by the definition of Watt as a unit of power. The next time you complain about the landlord using only 20-watt light bulbs in the hall, you are honoring the same man.

To help sell his steam engines, Watt needed a way of rating their capabilities. The engines were replacing horses, the usual source of industrial power of the day. The typical horse, attached to a mill that grinded corn or cut wood, walked a 24-foot diameter (about 75.4 feet circumference) circle. Watt calculated that the horse pulled with a force of 180 pounds, although how he came up with the figure is not known. Watt observed that a horse typically made 144 trips around the circle in an hour, or about 2.4 per minute. This meant that the horse traveled at a speed of 180.96 feet per minute. Watt rounded off the speed to 181 feet per minute and multiplied that by the 180 pounds of force the horse pulled (181×180) and came up with 32,580 ft.-lbs./minute. That was rounded off to 33,000 ft.-lbs./minute, the figure we use today.

Put into perspective, a healthy human can sustain about 0.1 horsepower. Most observers familiar with horses and their capabilities estimate that Watt was a bit optimistic; few horses could maintain that effort for long.

Although the standard for rating horsepower has been available for over 200 years, clever car manufacturers have found ways to change the ratings of their engines to suit their needs. During the famous horsepower wars of the 1960s, manufacturers could get higher figures by testing without auxiliary items such as alternators or even water pumps. High ratings backfired when insurance companies noticed them and started to charge more for what they saw as a higher risk. Manufacturers sometimes responded by listing lower horsepower figures, forcing enthusiasts to look at the magazine test reports to determine what was going on. In the early seventies the SAE (Society of Automotive Engineers) stepped in with standardized test procedures and the figures were more consistent.

Between 1922 and 1947, the Royal Automobile Club used a horsepower rating that was the basis for an automobile tax. Multiplying the square of the cylinder diameter in inches by the number of cylinders and then dividing that figure by 2.5 determined the horsepower of an engine. Using this dubious method, what we know of as a 385 horsepower motor found in the 2001 Z06 Corvette would be rated at only 48.67 hp!

There is a metric horsepower rating, although it is rarely used. The two methods are close, with one SAE horsepower equal to 1.0138697 metric horsepower.

One mechanical horsepower also equals 745.699 watts or .746 kW (kilowatts) of electrical horsepower. This means that if you really want to confuse people, you could complain about the 0.0268 horsepower light bulb your landlord has in the hallway as opposed to the mundane 20watt measurement.

<http://www.web-cars.com/math/horsepower.html>



America's Greatest History Attraction

High School Lesson Plan 1

Jessica Meyer, Mesquite Jr. High, Gilbert, AZ

- Lesson Plan Title:** The Industrial Revolution: A Blessing or a Curse?
- Grade Level:** Adaptable for grades 7 - 12
- Overview:** Students will consider how the Industrial Revolution affected the lives of Americans in the areas of family relationships, ease of life, and health and environment.
- Central Question:** To what extent did the technological advancements of the Industrial Revolution improve the lives of Americans in the areas of family relationships, ease of life, and health and environment? To what extent might these advancements have had a negative effect?
- Learning Objectives:** Students will understand and then think critically about social and technological advancements and trends in 19th century history, as well as how they continue to affect modern society.
- Assessment Tools:** Students will create a PowerPoint presentation to relay their findings and opinions to the class, after which, the class will participate in a debate regarding the overall effects of the Industrial Revolution on modern America.
- Key Concepts:** The evolution of technology during the 19th and early 20th century and its affect on family life, ease of life, and health and environment.
- Evidence/ Sources:** Students will use evidence on-site at the Greenfield Village and/or the Henry Ford Museum
- Time Frame:** The project will require one day at Greenfield Village and/or the Henry Ford Museum, two to three class periods to create PowerPoint presentations, one to two periods to present, and one period to debate the findings and reflect.
- Instructional Sequence:** The class will be divided up into groups, with each group gathering information on how technology and the Industrial

Revolution have affected their specific topic. More than one group may be assigned each topic. The topics include family relationships, ease of life, and health and environment.

The students will be assigned digital cameras.

The students will be encouraged to explore the exhibits at the Henry Ford Museum and Greenfield Village and question the staff, keeping in mind that their goal is to use the cameras and take notes to document how technology affected their specific topic.

The students will review their notes, download the photos that they decide are most useful to their topic, and try to formulate an opinion regarding the extent to which the Industrial Revolution affected the lives of Americans (restrict them to their specific topic area) positively or negatively.

The students will use their photos and notes to make a case for their argument by creating a PowerPoint presentation with their group members.

The students will present their PowerPoint presentation to the class.

The class will be allowed time to debate the overall positive or negative impact of the Industrial Revolution on different aspects of the lives of Americans.

Each individual will be asked to write a personal reflection explaining their opinions of the Industrial Revolution's impact on each area of Americans' lives.

Student Project Ideas: Project includes photo documentation, PowerPoint, debate, and personal reflection, but could be altered to create a photo portfolio and analysis of findings.

Anticipated Challenges: Depending on the students' familiarity with technology, they may need extra guidance downloading pictures and using them to create a PowerPoint. Students may also find it difficult to consider the negative effects of technology. Finally, remind students to consider ALL Americans, when tackling this project. Ask them to think about men, women, and children, as well as Americans from different ethnic backgrounds.

Curriculum Links:

Strand 1: Historical Perspective

- Standard I.1 Time and Chronology
- Standard I.2 Comprehending the Past
- Standard I.3 Analyzing and Interpreting the Past
- Standard I.4 Judging Decisions from the Past

Strand II. Geographic Perspective

- Standard II.2 Human/Environment Interaction

Strand IV. Economic Perspective

- Standard IV.1 Individual and Household Choices
- Standard IV.2 Business Choices

Strand V. Inquiry

- Standard V.1 Information Processing
- Standard V.2 Conducting Investigations

Strand VI. Public Discourse and Decision Making

- Standard VI.2 Group Discussion



America's Greatest History Attraction

High School Lesson Plan 2

Bill Harrison, Dearborn High School, Dearborn, MI

- Lesson Plan Title:** Entrepreneurs and Inventors Scavenger Hunt
- Grade Level:** 8-10 Economics
- Time Frame:** 55-minute class period
- Materials:** Computer with internet access for each student, the scavenger hunt handout, pen or pencil
- Assessment:** Students will turn in their written answers on the handout.
- Curriculum Links:** State of Michigan Social Studies Content Expectations:
USHG 6.1.1 Factors in the American Industrial Revolution
WHG 6.2.3 Industrialization
E 1.1.2 Entrepreneurship
- Sequence:**
- Students should have already been exposed to the Industrial Revolution in their World History and U.S. History courses, but you should take a few minutes to discuss the major personalities and inventions from the Industrial Revolution.
 - Students should have their computers up and running and have their pencil or pen. Pass out the scavenger hunt handout, discuss the directions and then the students may begin.
 - Working at their own pace, they should have time to finish.
 - Leave a few minutes to collect up the student's written responses at the end of the class period. It is always a good idea to have some other activity ready for students that may finish early.

Entrepreneurs and Inventors Scavenger Hunt

Name:

Visit the Internet sites at the links below and browse the articles and biographies for each individual to answer the questions given. Please answer with complete sentences on this paper.

John Kay

http://www.ihs.issaquah.wednet.edu/Teachers/Fine/john_kay.htm



1. What did he invent in 1733?
2. Why did angry weavers attack John Kay's home in 1753?

James Hargreaves

<http://www.saburchill.com/history/chapters/IR/010.html>

3. What did he invent?
4. What was his invention "capable" of doing?

Richard Arkwright

http://www.bbc.co.uk/history/historic_figures/arkwright_richard.shtml

5. What job did he have before becoming an entrepreneur?
6. What machine did he patent in 1775?

Eli Whitney

http://www.pbs.org/wgbh/theymadeamerica/whomade/whitney_hi.html

7. What task did his cotton gin do ten times faster than by hand?
8. He popularized the "American System" of mass production. What was this system?

James Watt

http://www.bbc.co.uk/history/historic_figures/watt_james.shtml

9. He is known for making improvements to what type of engine?
10. What was named in Watt's honor?

Robert Fulton

<http://xroads.virginia.edu/~HYPER/DETOC/transport/fulton.html>

11. What was he credited with inventing?
12. Why wasn't his steamboat design successful on many western inland rivers?

Richard Trevithick

http://www.museumwales.ac.uk/en/rhagor/article/trevithic_loco/

13. What was he the first to create?

George Stephenson

<http://www.cottontimes.co.uk/stephensono.htm>

14. What is he erroneously known as?
15. He created a railway line that opened in 1830 between which two major British cities?

Samuel Slater

http://www.pbs.org/wgbh/theymadeamerica/whomade/slater_hi.html

16. What did British law forbid when he moved to America?
17. Who did Slater build America's first spinning mill with?
18. What was the source of power driving there machinery in the mill?

Francis Cabot Lowell

http://www.pbs.org/wgbh/theymadeamerica/whomade/lowell_hi.html

19. What did Lowell and his partners do to raise money for their mill?
20. What attraction might a farm girl have to go work in Lowell's mill?

George Pullman

http://www.pbs.org/wgbh/amex/chicago/peopleevents/p_pullman.html

21. Why was he "hailed as a genius and a hero" in Chicago?
22. What business did he make his fortune?
23. Why did the Pullman workers go on strike in 1894?
24. After Pullman died, what were family members worried former employees would do?

Elijah McCoy

<http://www.usi.edu/science/engineering/MISC/emccoy/emccoy.htm>

25. What was his first patent (the “Real McCoy”)?
26. What did McCoy describe as his greatest definition?

Thomas Edison

<http://edison.rutgers.edu/biogrphy.htm>

27. How many patents is he credited with?
28. What did he invent in the summer of 1877?
29. What are three other inventions of Edison?

George Washington Carver

http://www.gale.cengage.com/free_resources/bhm/bio/carver_g.htm

30. He showed 300 products could be derived from the _____, and 100 products from the _____



America's Greatest History Attraction

High School Lesson Plan 3

Bill Harrison, Dearborn High School, Dearborn, MI


- Lesson Plan Title:** Economic Concepts in *Mill Times*
- Grade Level:** 8-10 Economics
- Overview:** This is a self-paced PowerPoint exercise that focuses on economic concepts in David Macaulay's video *Mill Times*. As students individually watch clips of the video on their computer, they answer multiple choice and short constructed response questions, as well as read about economic concepts illustrated in the video.
- Time Frame:** Roughly two 55-minute class periods.
- Materials:** Computers with headphones for each student, the lesson's two PowerPoint with the file of hyperlinked video clips, pen or pencil, paper for written responses (*Personal Journals*)
- Assessment:** Students will turn in their written responses to many questions posed in the PowerPoint at the end of the session, and the instructor can also observe how successful students are with their multiple choice answers.
- Curriculum Links:** State of Michigan Social Studies Content Expectations:
USHG 6.1.1 Factors in the American Industrial Revolution
WHG 6.2.3 Industrialization
E 1.1.2 Entrepreneurship
E 1.2.2 Price in the Market
E 1.2.3 Price, Equilibrium, Elasticity, and Incentives
E 2.1.1 Income
- Sequence:** **Day 1:** Students should have already been exposed to the Industrial Revolution in their World History and U.S. History courses, but you should take a few minutes to discuss the major points the students should remember about it.
- Students should have their computers up and running and have their head phones, pencil and paper. They will open *Economic Concepts in Mill Times PowerPoint* (part 1) and begin. Part one of the exercise contains roughly 26 minutes of video and a number of slides with information and questions.

Students will proceed through the PowerPoint at their own pace, and should have plenty of time to finish. Leave a few minutes to collect up the student's written responses at the end of the class period.

Day 2: Spend a few minutes reviewing what was covered the day before and then allow the students to begin *Economic Concepts in Mill Times PowerPoint* (part 2). If a student needs to go back and finish a small section from part 1, they should have enough time. Part 2 contains roughly 24 minutes of video and a smaller number of slides of information and questions.

You may have a few minutes to debrief at the end of the class period, but be sure to leave a few minutes to collect up the student's written responses at the end of the class period.

Directions: As you complete this Powerpoint exercise, be sure to **read** each slide and watch each video clip completely before clicking forward.

 If you have any **questions**, please raise your **hand** for assistance from your instructor.

Click the arrow to continue



Please make sure you have a **pencil** or pen and your ***Personal Journal*** with you as you complete this exercise.

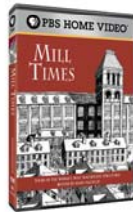


Back

Forward



Economic Concepts in *Mill Times*



Back

Forward

David Macaulay's video *Mill Times* introduces changes that occurred in the textiles (cloth) industry during the Industrial Revolution. The **Industrial Revolution** describes the period, starting in England in the 1700s, of transition from home-based hand manufacturing of goods to machine-made factory production.

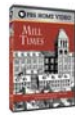
Back

Next

As you watch this video, you will be introduced to, and asked questions about, key economic concepts.
Be sure to be wearing your headphones.
Let's begin *Mill Times*.



Back



To video



Back

Forward



This introductory video clip showed many examples of *factors of production*.



Back to video

Next



The four **factors of production**, or resources required to produce the things we would like to have, are **land, capital, labor** and **entrepreneurs**. All four are required to produce goods and services.



Next



Land includes the “gifts of nature” or natural resources not created by human effort. “Land” includes *deserts, soil, forests, mineral deposits, livestock, and even sunshine.*



Next

For example, in the production of a wooden **pencil**, trees, water, sunshine, and soil are all “gifts of nature” needed.



Next

Capital includes the tools, equipment, and factories used in production, such as *bulldozers*, *hammers*, and *computers*.



Capital is a result of production.



Next

Capital resources for producing a pencil could be **saws** for cutting the trees, the pencil **factory**, and **trucks** for transporting materials.



Next

Labor includes *people* with all their efforts and abilities.



Next

Labor used to produce the pencil could be lumberjacks, factory workers, truckers, accountants and others.



Next

Entrepreneurs are the individuals who start a new business or bring a product to market by organizing the factors of production for a profit.



Next

The individual who started the pencil company would be considered the entrepreneur.



Next

The factors of production-- land, labor, capital, and entrepreneurs-- are the **same** today as they were before the *Industrial Revolution* in the 1700s, but the **specific productive inputs** have **changed** over time.



Next



The video clip showed many examples of *land*. Which of the following is not an example of a “gift of nature?”

Click on the best answer.

A) the sun

B) the cart

C) the pond

D) the sheep

Try again!



Your choice is a “gift of nature.”

Click the arrow and give it another try.



Correct!

The cart is actually a capital resource.

Click the arrow to continue.





You may have noticed the woman cooking the chicken next to the fire.

Next



Today, your household oven is a much more *efficient* means of cooking than at the hearth of a fire place.




Next



Why do you think today's ovens cook more efficiently than using an open fire.
Record your one paragraph answer in your Personal Journal.



Next

 When you have completed writing in your Personal Journal, continue the video by clicking the camera icon.

Next



The video clip showed examples of *capital*. Which of the following is not an example of a capital resource?

Click on the best answer.

[A\) the sheers](#)

[C\) the spinning wheel](#)

[B\) the oxen](#)

[D\) the carding brushes](#)

 Correct!

The oxen are a “gift of nature,” not a capital resource.

Click the arrow to continue.



Try again!

Which is not a tool or equipment used in producing a good or service.

Click the arrow and give it another try.





Next



The video clip showed an example of a hand loom for weaving cloth. The original power source for a hand loom in a home was:

Click on the best answer.

- [A\) water power](#) [C\) animal power](#)
[B\) steam power](#) [D\) human power](#)

Try again!
Remember who was
operating the hand loom?
Click the arrow and give it another try.



Correct!

The first hand looms for
weaving cloth were powered
by a person's hands and feet.
Click the arrow to continue.






The carding machine shown in the clip was powered by a waterwheel pushed by the running water from a river. A river is another example of the factor of production called *land*.





Before the Industrial Revolution, the spinning of wool into thread or yarn was a *domestic industry*. A domestic industry usually operated when materials (wool) were supplied to a worker in a home who created the finished product (thread).



Next

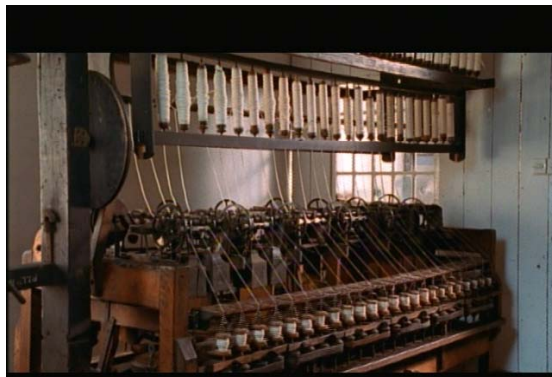
Two small images: the left one shows a basket of wool on a wooden surface, and the right one shows hands spinning wool on a spindle.

A spinning wheel was used to spin the wool.



Next

A water frame was a machine, run by a waterwheel, that could produce thread much more quickly and efficiently than a spinning wheel.



Next

The water frame made the domestic industry of spinning by hand in the home obsolete.

Are their jobs being lost to mechanization and machines today?



Record your one paragraph answer in your Personal Journal.



Next

The next clip introduces a fictional story of an entrepreneur trying to open a thread spinning mill in New England at the start of the 1800s.

Next



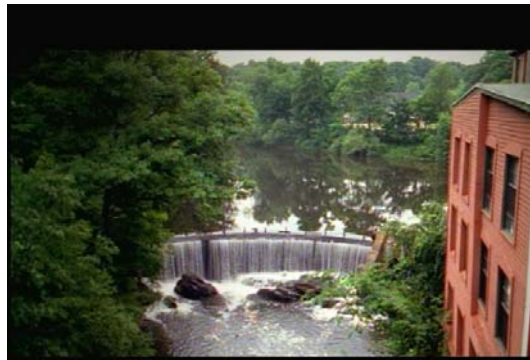
The *entrepreneur* in the story, Mr. Huntington, was trying to find investors to supply the needed *financial capital* for his spinning mill. *Financial capital is the money used to buy the capital resources needed for production.*



Next



The builders of the Huntington Mill in the video built a dam across the river to regulate the flow of water for their waterwheel.



The building of the dam upset some of the locals who fished the river. The dam blocked the salmon from swimming up stream and reproducing, reducing the number of fish in the river



Next

The reduction in fish due to the building of the dam is an example of an *negative externality*.

An *externality* is an unintended side-effect that affects a third party not involved in the activity that caused it.

A *negative externality* causes harm, cost, or inconvenience to a third party.

Next

Can you imagine a possible negative externality if the government decided to build a major airport next to your home?

 Record your one paragraph answer in your Personal Journals.



Next



Next



Mr. Huntington believed the Embargo Act of 1807 would help his thread spinning business. This is because an *embargo* prohibits trade with other nations, so imported British thread would no longer be competing with thread produced at the Huntington Mill.

Do you think this embargo helped the consumers buying thread?

Record your one paragraph answer in your Personal Journal.



Next

A large black rectangular area, likely a placeholder for a video or a blank space for a response.

Next



The first mills in the United States opened in New England due to what natural advantage?

Click on the best answer.

[A\) swift flowing streams](#)

[B\) abundant wildlife](#)

[C\) fertile soil](#)

Try again!

What was powering the waterwheels?

Click the arrow and give it another try.



Correct!

The swift flowing rivers
due to rain and melting
snow powered the mill's
waterwheel.

Click the arrow to continue.



Next





The first person to construct spinning machines for a mill in the United States was:

Click on the best answer.

- [A\) Rhode Island](#)
- [B\) Samuel Slater](#)
- [C\) Paw Tucket](#)
- [D\) Henry Ford](#)

Try again!

The person brought his ideas for the spinning machines over from England.

Click the arrow and give it another try.



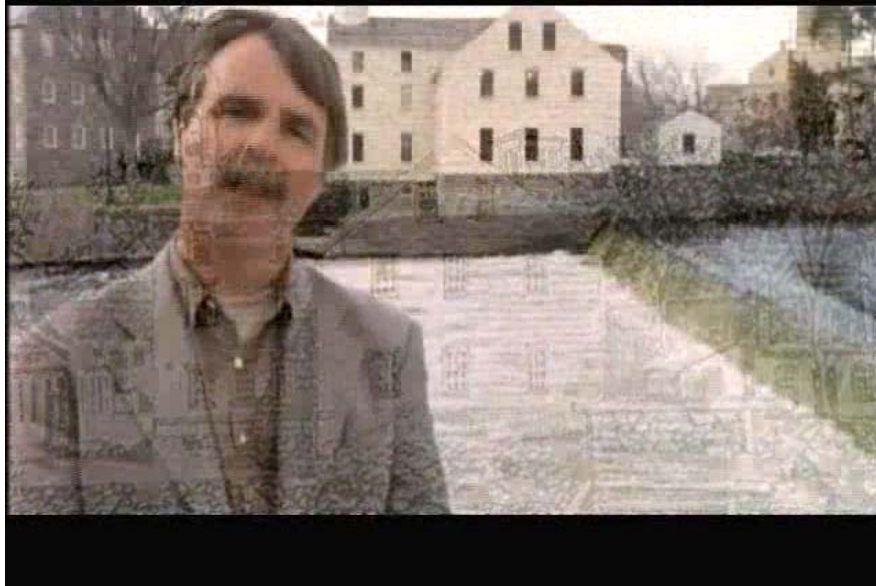


Correct!



Britain forbid engineers, mechanics and toolmakers from leaving the country, but the mill worker Samuel Slater memorized designs of the machines and managed to bring them to the U.S..

Click the arrow to continue.



Next





The powertrain of a mill was used to:

Click on the best answer.

A) transfer power from the waterwheel to the machines

B) transport raw materials on tracks to the mill



Correct!



As the waterwheel turned a set of gears, series of straps and pulleys transferred power to the machines.

This system is called a powertrain.



Click the arrow to continue.



Try again!
An example of a
powertrain was shown in
the clip.

Click the arrow and give it another try.



Next



As the mills became larger, owners began gathering the jobs of carding, spinning, and weaving “under one roof.” This is an example of *vertical integration*, where the different steps of producing a particular product (cloth) are brought together in the same business.

Next



As more and more spinning mills opened in New England, and competition increased, what do you think happened to the price consumers paid for thread?

Click on the best answer.

- [A\) the price increased](#)
- [B\) the price decreased](#)
- [C\) the price would not change](#)

Try again!

What will a mill owner
have to do to their prices
to compete with the other
mills?

Click the arrow and give it another try.



Correct!

The increased competition and
increase in a supply of thread will
normally create lower prices for
consumers.

Click the arrow to continue.





The owners of Huntington Mill decided to expand on the size of their mill while their waterwheel was repaired. They were hoping to capitalize on the *economies of scale* with greater production.

◀ Next ▶

Economies of scale describes the decrease in the cost of producing a unit of a product when increasing production. The more a business makes, the cheaper it is to make each unit.


Next

You have reached the end of part one of this *Mill Times* Powerpoint exercise.

Raise your hand and notify your teacher and turn in your *Personal Journal*.



Directions: As you complete this Powerpoint exercise, be sure to **read** each slide and watch each video clip completely before clicking forward.

 If you have any **questions**, please raise your **hand** for assistance from your instructor.

Click the arrow to continue



Please make sure you have a **pencil** or pen and your ***Personal Journal*** with you as you complete this exercise.

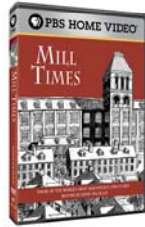


Back

Forward



Economic Concepts in *Mill Times Part 2*



Back

Forward

David Macaulay's video *Mill Times* introduces changes that occurred in the textiles (cloth) industry during the Industrial Revolution. The **Industrial Revolution** describes the period, starting in England in the 1700s, of transition from home-based hand manufacturing of goods to machine-made factory production.

Back

Next

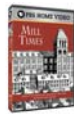
As you watch the second half of this video, you will be introduced to, and asked questions about, key economic concepts.

Be sure to be wearing your headphones.

Let's return to *Mill Times*.



Back



To video



Next





According to the video clip, _____
out of 10 Americans lived on farms in
the early 1800s.

Click on the best answer.

A) 1

B) 3

C) 6

D) 9



Try again!

A larger ratio of Americans
lived on farms.

Click the arrow and give it another try.





Correct!

9 out of 10 Americans lived on farms in the early 1800s.

Click the arrow to continue.



The “Lowell Girls” that moved from their rural homes into the cramped boarding houses boarding houses often worked six days a week for 12 to 13 hours a day.

Why do you think these girls would leave there homes for a job in the mill?

Record your one paragraph answer in your Personal Journal.



Next





Next

Due to falling prices from increased competition, mill owners needed to increase *productivity* to maintain a *profit*. Productivity increases whenever more output is produced using the same amount of input (Labor for example).

Back

Next

To increase productivity in the mill, the workers were expected to tend to three weaving machines instead of two. This would cut production costs.

Since Profit is the *money left over from the revenue of selling the product after production costs have been removed*, the mill owners would expect greater profits with the increase in productivity.



Back



Next



By demanding the mill workers to tend a greater amount of machines for the same pay, is it possible a mill's profits could actually decrease?

Describe in one paragraph in your *Personal Journal* possible situations where this drop in profits might occur.



Next





Moses Brown opened the first spinning mill, housing Samuel Slater's machines, in:

Click on the best answer.

- [A\) Dearborn, Michigan](#)
- [B\) Harrisville, New Hampshire](#)
- [C\) Pawtucket, Rhode Island](#)
- [D\) Lowell, Massachusetts](#)

Try again!

It is located in the smallest
of the United States.

Click the arrow and give it another try.



Correct!



You can still visit the location of
that mill today.

Click the arrow to continue.





Next

The mill girls went on *strike* to protest the unsafe working conditions in the mill. A strike occurs when workers refuse to work until certain demands are met. Why didn't the mill owners just fire all of the striking workers? Record your one paragraph answer in your *Personal Journal*.

Back



Next




Child labor was common during much of the Industrial Revolution.

Today, we have child labor laws which limit the age, the number of hours, and the jobs children may work.

Do you think children should be able to quit school and work any job they wish?

Record your one paragraph answer in your *Personal Journal*.

Back  *Next*



With the advent of the steam engine, mills no longer needed to be located next to swift-moving rivers. Many of the New England mills moved to the southern United States to be close to cotton plantations.





Eventually, these mills moved out of the United States (and Britain) to other nations with a cheaper source of _____.

Click on the best answer.

[A\) Labor](#)

[B\) Land](#)

[C\) Capital](#)

Try again!

The mill owners wanted to cut the cost of wages.

Click the arrow and give it another try.



Correct!

The textile industry moved to exploit the cheaper labor force in other nations.

Click the arrow to continue.



Next



Are you comfortable with the following economic concepts discussed in this exercise?

Factors of Production

Land

Labor

Capital

Entrepreneur

Domestic Industry...

Next



Are you comfortable with the following economic concepts discussed in this exercise?

Financial Capital

Externality

Negative Externality

Embargo

Vertical Integration

Economies of Scale...

Next



Are you comfortable with the following economic concepts discussed in this exercise?

Productivity

Profit

Strike



Next

You have reached the end of the *Mill Times* Powerpoint exercise. Raise your hand and notify your teacher and turn in your *Personal Journal*.






America's Greatest History Attraction

High School Lesson Plan 4

Bill Harrison, Dearborn High School, Dearborn, MI

- Lesson Plan Title:** Supply, Demand and Prices in the Industrial Revolution
- Grade Level:** 8-10 Economics
- Time Frame:** 55-minute class period
- Overview:** This is a self-paced PowerPoint exercise that focuses on supply, demand and prices using examples from the Industrial Revolution. As students individually complete the exercise, they answer multiple choice questions, as well as read about economic concepts illustrated in the questions.
- Materials:** Computers with headphones for each student, the lesson's two PowerPoints with the file of hyperlinked video clips
- Assessment:** The instructor can observe how successful students are with their multiple choice answers.
- Curriculum Links:** State of Michigan Social Studies Content Expectations:
USHG 6.1.1 Factors in the American Industrial Revolution
WHG 6.2.3 Industrialization
E 1.1.2 Entrepreneurship
E 1.2.2 Price in the Market
E 1.2.3 Price, Equilibrium, Elasticity, and Incentives
E 2.1.1 Income
- Sequence:**
- This activity is a review of supply, demand and prices. It is best to spend some time at the start of the period reviewing the causes for changing supply and demand and how it affects prices.
 - Students should have their computers up and running and have their head phones ready. They will open *Supply, Demand and Prices in the Industrial Revolution* PowerPoint and begin. Students will proceed through the PowerPoint at their own pace, and should have plenty of time to finish.
- There should also be time at the end of class to debrief and go over any troubles students had with specific questions

Directions: As you complete this PowerPoint exercise, be sure to **read** each slide and watch each video clip completely before clicking forward.

 If you have any **questions**, please raise your **hand** for assistance from your instructor.

Click the arrow to continue



Please make sure you have a **pencil** or pen and your ***Personal Journal*** with you as you complete this exercise.



Back

Forward



Economic Concepts in the Industrial Revolution



Back

Forward



You have already been introduced to the Industrial Revolution in your World and U.S. History classes. Therefore, you should recall that the **Industrial Revolution** describes the period, starting in England in the 1700s, of transition from home-based hand manufacturing of goods to machine-made factory production.



Back

Next



As you complete this Powerpoint, you will be quizzed about key economic concepts already discussed in our Economics class. This will give you the opportunity to review and discover any areas of weakness you may have.

Be sure to be wearing your headphones.

Let's begin ...



Back

Continue



Products produced at the start of the Industrial Revolution abided by the same economic laws of supply and demand as products today.



Back

Forward



Before the Industrial Revolution, the spinning of wool into thread or yarn was a *domestic industry*. A domestic industry usually operated when materials (wool) were supplied to a worker in a home who created the finished product (thread).



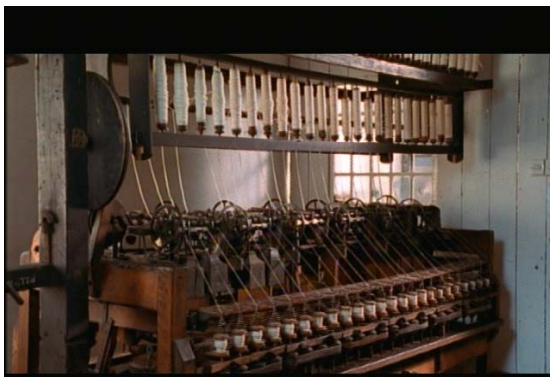
Next

A *spinning wheel* was used to spin the wool.



Next

A *water frame* was a machine, run by a waterwheel, that could produce thread much more **quickly** and **efficiently** than a spinning wheel.



Next



What should have happened to the **supply** of thread in the market due to the introduction of the water frame?

Click on the best answer.

- A) increased
- B) decreased
- C) stayed the same

Try again!



The water frame was much more efficient than spinners using a spinning wheel.

Click the arrow and give it another try.



Correct!

The water frame would cause the supply curve to shift to the **right** (increase) due to the new **technology**.

Click the arrow to continue.





What should have happened to the **price** of thread in the market due to the introduction of the water frame?

Click on the best answer.

- A) increased
- B) decreased
- C) stayed the same



Try again!

The water frame caused the supply to increase.

Click the arrow and give it another try.



Correct!

The increase in supply of thread would cause the price to decrease in the market.

Click the arrow to continue.



When the price of thread decreased due to the introduction of the water frame in mills, what should have happened to the amount of thread consumers **purchased**?

Click on the best answer.

[A\) increased](#)

[B\) decreased](#)

[C\) stayed the same](#)

Try again!
According to the Law of
Demand, what happens to
the quantity demanded when
the price decreases?



Click the arrow and give it another try.



Correct!
According to the Law of
Demand, the quantity
demanded will increase
when the price decreases.

Click the arrow to continue.





When the price of thread decreased due to the introduction of the water frame in mills, what should have happened to the **supply** of **cloth** produced by weavers?

Click on the best answer.

[A\) increased](#)

[B\) decreased](#)

[C\) stayed the same](#)

Try again!

Remember, the cost of thread (a productive input for making cloth) is now lower.



Click the arrow and give it another try.



Correct!

The thread is a *productive input*.
Now that the thread is cheaper,
weavers are *willing and able to
produce more cloth at each and
every market price*.



Click the arrow to continue.



When the price of cloth decreased due to the lower cost of thread, what should have happened to the **price of cloth** produced by weavers?

Click on the best answer.

[A\) increased](#)

[B\) decreased](#)

[C\) stayed the same](#)

Try again!
Remember, the supply of
cloth has shifted to the
right (increased).



Click the arrow and give it another try.



Correct!
The **increase** in **supply**
causes the **price** to **decrease**
in the market.



Click the arrow to continue.





When the supply of **cloth** produced by weavers **increased**, what economic problem would occur if the price had **not** decreased in the market and stayed the same?

Click on the best answer.

[A\) surplus](#)

[B\) shortage](#)

[C\) no problem would occur](#)

Try again!

Remember, if the price did not decrease, weavers would produce more than the consumers would want at that price.

Click the arrow and give it another try.



Correct!

A surplus would occur because at the original price, the **quantity supplied** by the weavers would be **greater** than the **quantity demanded**.

Click the arrow to continue.



Imagine a “lamb flu” killed all of the sheep in the United States. How would this affect the price for thread and cloth made from wool?

Click on the best answer.

- A) increased
- B) decreased
- C) stayed the same

Try again!

Remember, the supply of wool would decrease due to the death of the sheep.

Click the arrow and give it another try.



Correct!

The supply of wool would decrease causing the price of woolen products to increase.

Click the arrow to continue.





If the price for wool did not increase after the sheep had died off, what economic problem would have resulted?

Click on the best answer.

[A\) surplus](#)

[B\) shortage](#)

[C\) no problem would occur](#)



Try again!

Remember, if the price did not increase, the quantity demanded would be greater than the quantity supplied.

Click the arrow and give it another try.



Correct!

The price increases to clear the market of the shortage created by the death of the sheep.

Click the arrow to continue.



The power source to run the new machines in the textile mills at the start of the Industrial Revolution was mainly water power. Rivers turned the mills waterwheel which, through a series of shafts, gears and belts, provided power to the ...



Back

Forward



...spinning, carding and weaving machines. Possible difficulties with waterwheels was the risk of freezing during the winter months or a drought removing the source of energy.



Back

Forward



Steam engines began to replace the waterwheels in mills. Steam engines could run at anytime of the year, away from rivers.



Back

Forward





Since steam engines could run the mill's machines throughout the year, what would happen to the supply of textiles produced by the mills?

Click on the best answer.

- [A\) increased](#)
- [B\) decreased](#)
- [C\) stayed the same](#)

Try again!

The mills would be able to operate more days a year with the steam engine.

Click the arrow and give it another try.



Correct!

The supply of textiles would increase due to the ability of the mills to operate and produce for a greater number of days.

Click the arrow to continue.



The four **factors of production**, or resources required to produce the things we would like to have, are **land, capital, labor** and **entrepreneurs**. All four are required to produce goods and services.



Next



Entrepreneurs are the individuals who start a new business or bring a product to market by organizing the factors of production for a profit.



Next



Henry Ford was an entrepreneur that needed to know about the laws of supply and demand.

Back

Forward

Henry Ford, in *My Life and Work*, wrote “I will build a motor car for the great multitude. It will be large enough for the family but small enough for the individual to run and care for...[I]t will be so low in price that no man making a good salary will be unable to own one.”

Next

His car was the Model T.



Next

The Model T was successful upon its release. A little too successful.



Next



Next

A **shortage** occurred at the Model T's original price of \$850. Henry Ford could either raise his price or increase the supply to meet the equilibrium price and clear the market of the shortage. But how could he increase the supply?



Next



Next





The use of the assembly line increased the productivity in Ford's factories. When productivity increases, what happens to the supply?

Click on the best answer.

[A\) increases](#)

[B\) decreases](#)

[C\) stays the same](#)

Try again!
When productivity
increases, output
increases.

Click the arrow and give it another try.



Correct!
Increase productivity causes
the supply curve to shift to
the right (increase).
Click the arrow to continue.



Even with this great success, the
use of the assembly line soon
created problems.



Next





Next



When workers are unhappy or quit, what happens to the supply of a product?

Click on the best answer.

- A) increase
- B) decrease
- C) stays the same

Try again!
Unhappy workers and
workers who quit are less
productive.

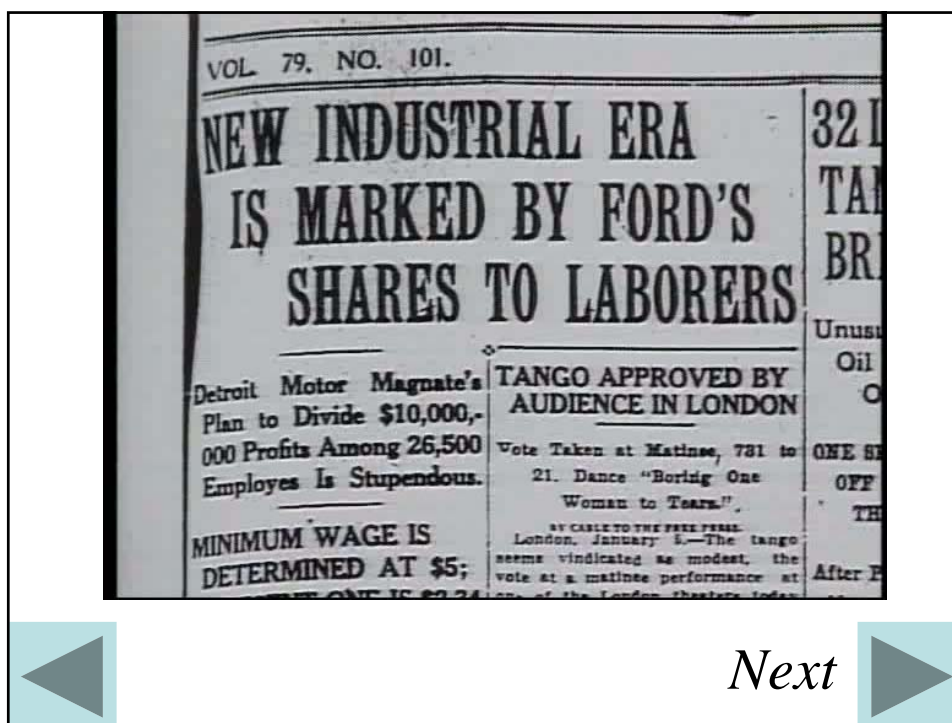
Click the arrow and give it another try.



Correct!
This lowers productivity and
decreases the supply.

Click the arrow to continue.





The increase in wages (price for labor) causes an increase in the willingness and ability for workers to work and their desire to stay on the job.

Next



The depression caused a reduction in the income of most Americans. When income decreases, what happens to the demand for most products?

Click on the best answer.

- [A\) increase](#)
- [B\) decrease](#)
- [C\) stays the same](#)

Try again!

If consumers have less money, they will buy less.

Click the arrow and give it another try.



Correct!

A decrease in income causes the demand curve to shift to the left (decrease).

Click the camera to continue.





Henry Ford tried to keep his workers from unionizing as long as possible. Eventually, his workers went on strike in order to gain the right to organize.





When workers go on strike, what happens to the supply curve of the product they are producing?

Click on the best answer.

- A) increase
- B) decrease
- C) stays the same

Try again!
If the workers are not
working, they are not
producing.

Click the arrow and give it another try.



Correct!
A strike causes the supply
curve to shift to the left
(decrease).

Click the arrow to continue.



Henry Ford and all business owners
must be aware of the Laws of
Supply and Demand and how they
affect prices and so do **you**.



Next



You have reached the end of
this Powerpoint exercise.
Raise your hand and notify your
teacher and turn in your
Personal Journal.





America's Greatest History Attraction

High School Lesson Plan 5

Melanie Bolton, Ecorse High School, Ecorse, MI

Lesson Title:	The Expansion of American Industry- Communication Technology and Inventions
Grade Level:	9-10th
Overview:	Students will learn about inventions and inventors in the late 19 th century. The students will research inventions/inventors in the 20 th century.
Central Question:	How did the inventions in the 19 th and 20 th centuries change the lives of the people living in those centuries and our lives today?
Learning Objectives:	The student will: <ul style="list-style-type: none">• identify inventions/inventors of the 19th and 20th centuries• explain how inventions transformed American life after the Civil War• analyze how advances in electric power and communication affected people and business• compare and contrast the inventions between the 19th and 20th centuries
Assessment Tools:	Summary on "Inventors" video and from homework reading Handout from reading of textbook Presentation of project to class from internet research or field trip
Evidence/ Sources:	Lecture notes and reading from textbook "Inventors" video Internet research
Curriculum Links:	Michigan Department of Education Social Studies Content Standards U6- History 6.1 Growth of an Industrial and Urban America 6.1.1 Factors in the American Industrial Revolution 6.1.5 Case Study of American Industrialism

F2 Foundational Issues Changes in commerce,
transportation and communication
P2 Information Processing
P2.2 Read and interpret data in tables and graphs
P2.3 Know how to find and organize information from a
variety of sources

Lesson Sequence:

Day 1:

Students will take notes on inventors and inventions of the 19th century- Samuel Morse, Alexander Graham Bell and Thomas Edison. After lecture watch “Inventors” video.

Assessment: Summary on video

Homework: Read pages 226-235 and write 1-page summary

Day 2:

Students will work with a partner and research 5 inventions (not mentioned in notes or book) from 19th century

At least 2 major inventions

Describe each inventor and invention

Choose 1 invention and discuss how our lives would be today if it was never invented

Assessment: Present to class their findings

Homework: Complete ‘Technological Revolution’ handout (from yesterday’s reading)

Days 3-5:

I have two lesson plans:

1 for a field trip to The Henry Ford (can be 1 or 2 days)

if 2 days will include Greenfield Village

1 for work in the class (in case I am not able to do a field trip)

Days 3-5: (Field Trip Option)

Students will work with a partner and research at least 10 inventions from 19th and 20th centuries that are at

The Henry Ford (must have at least 3 from the 19th century)
List and describe 10 inventors and their inventions and how invention affected American lives

Work on project for presentation - poster board or digital picture presentation

Poster Board

Description and pictures of at least 10 inventors and their inventions

Describe inventors and inventions during presentation

Digital picture presentation

Pictures of at least 10 inventions

Describe inventors and inventions during presentation

Days 3-5: (In- class option)

Students will work with a partner and research 10 inventions from the 20th century

List and describe 10 inventions that changed the world and how invention affected American lives

Cannot use computer or internet

Cannot be a modification of a previous invention

Work on project for presentation

Poster Board-

Front:

Description of the 3 inventors lectured and read on Day 1

Have at least 1 picture of an invention from each inventor

Back or 2nd board

Description and pictures of the 10 inventions researched from 20th century

Must have name of inventor along with invention

*If needed a 6th day for presentations



America's Greatest History Attraction

High School Lesson Plan 6

Amy Catanzaro, Dakota High School, Macomb, MI

Title of the Lesson:	The Effects of Industrialization on Life at Home
Grade Level:	10 th Grade US History
Overview:	After covering the key ideas, events, and people of the Industrial Revolution, students will visit Greenfield Village to observe how industrialization affected the daily lives of all people—not just those in cities who worked in factories.
Central Question:	How was daily life affected by the Industrial Revolution?
Learning Objectives:	Students will be able to name and explain how industrialization changed the way homes were built, maintained, and used. Students will be able to name and explain specific changes that occurred in the home as a result of industrialization. Students will be able to explain how industrialization changed the tasks, tools, and gender roles in the home. Students will be able to identify ways in which new inventions continue to change life at home in today's world.
Assessment Tools:	Student understanding will be assessed based on field trip observation charts, responses to reflection questions, and class discussion
Key Concepts:	Industrialization Inventions/Technology of the Industrial Revolution Gender Roles in the 18 th , 19 th , and 21 st Centuries
Evidence/ Sources:	Textbook Class Lecture/Discussion Firsthand Observations/Experiences at Greenfield Village Class Discussion
Time Frame:	Approximately 3 days, within the larger unit on Industrialization (about 3 weeks)

Instructional Sequence: *In Advance:*

1. Before the field trip, students will have already been introduced to the background, causes, and terminology of the Industrial Revolution, using class readings, lecture, and video clips.
2. Before field trip, explain that the main purpose of the trip is to visit two homes where we will be able to observe for ourselves the ways in which the IR changes people's lives at home.
 - a. Review with students observation and note-taking skills
 - b. Review school rules and logistics of field trip

Day One:

3. Visit Greenfield Village. All students will be required to visit Daggett House and Firestone Farm for at least 30 minutes each. At each site, students will fill out their observation charts carefully.
4. Students will then choose three other sites to visit, from a list I provide.

Day Two:

5. On the day after the field trip, students will have some time for discussion and questions.
6. Next, students will be required to complete the Reflection Questions.

Day Three:

7. The next day, students will discuss some of their responses as a class.
8. Class discussion should then transition to today's world: In what ways has new technology made house work easier than it was when their parents (or grandparents) were teenagers? Think of new technologies that didn't exist 20 (40) years ago. In what ways do they help us to save time and energy? What new inventions have added to our house work?
9. Class responses should be recorded on the board or large sheets of paper for later reference.
10. A last question for students to think about: What kinds of things might exist 20 years from now that might make house work easier?

Student Project Ideas:

Students could interview an older adult to discuss the differences in the kinds of work done at home (and the tools used) when they were a teenager. Findings could be presented in essay, PowerPoint, or multimedia format.

Using digital photos taken during their field trip, students could create a PowerPoint or digital movie demonstrating the ways in which the industrial revolution changed life in the home.

In a cross-curricular team, students could work in their English classes to write journal entries from the point of view of a teenager living in one (or both) of the homes visited on the field trip.

Daggett/Firestone Observation Chart

Name: _____

Directions: Fill out the chart below completely and thoroughly. You will need to spend a good deal of time in each house to fill this out. Make sure to carefully observe each house, the items inside it, and the people working inside each house. You will need to ask questions of the presenters in each house and listen carefully to their answers.

	Daggett House	Firestone Farm
Your first impression walking up to the house— what do you think of it? Why?		
Describe the exterior of the house (materials, colors)		
What are the walls made of?		

<p>Describe the types of furniture you see (What kinds? Does it look comfortable?)</p>		
<p>Describe how the house is decorated (is there wallpaper? Artwork? Fancy furniture?)</p>		
<p>Appliances used in the house (things to help people do work in the house)</p>		
<p>Tools used in/around the home</p>		
<p>Gender Roles in each house (what work did women do in this home? What work did men do?)</p>	<p><u>Men:</u></p> <p><u>Women:</u></p>	<p><u>Men:</u></p> <p><u>Women:</u></p>

Industrialization at Home: Reflection Questions

Yesterday, you visited Greenfield Village and had the opportunity to observe the Daggett and Firestone Farms. Today, you will use your observation chart, along with your class notes and materials to answer the following reflection questions.

Remember that your answers should be thorough and complete. Your responses should be in complete sentences and you must use examples to explain your answers. **To receive full credit, your work must demonstrate your knowledge.**

1. What were some of the biggest differences that you noticed between the two homes? Explain.
2. What changes were going on the world between the time the two homes were built and lived in? How did the changes affect life in the home?
3. In what ways did industrialization make life better or more comfortable? Use specific examples from each house to explain.
4. Think of at least one way that industrialization actually created *more* work for those who worked in the home (namely, women). Explain using an example from what you saw/learned yesterday.
5. How did industrialization change men's work?
6. If you had to go back in time and live for a week in either the Daggett Farm or the Firestone Farm, which would you choose and why? Think about what role you would have to play in the household.



America's Greatest History Attraction

High School Lesson Plan 7

Candice Chupek, Crestwood High School, Mantua, OH

- Lesson Title:** Mass Communication through the 20th Century
- Grade Level:** 10th-11th grades U.S. History/Popular Culture
- Time Frame:** 1-3 50-minute class periods for research, creation and presentation
- Curricular Placement:** Activity should occur at the completion of 20th century American history or American Popular Culture Studies course.
- Central Questions:** How did the mass communication revolution of the 20th century begin? Who was involved?
- What was the progression of mass communication?
- Did these events occur only in the U.S. or elsewhere in the world?
- What are the benefits/drawbacks of mass communication on people, their societies and the world?
- Objective:** Students will research and present a brief historical annotated timeline of the changes in mass communication in the 20th century.
- Instructional Sequence:**
1. Students will form groups of 3-4.
 2. Students will research through written, classroom, and Internet sources to create a comprehensive timeline of the technology that helped to create our current system of mass communication from the telegraph to wireless communications.
 3. Students will create an annotated timeline with a minimum of 25 mass communication/technological advances/inventors that have occurred between the years 1900 and today. Each event must have an image and a brief written description of the event.
 4. The visual aid must be neat, colorful, appealing and accurate.

5. Students will present their timelines to their class and field any questions.

Follow-up activity:

Students will be asked to answer a number of short answer questions in reference to the information in the project. Students will answer individually. Answers are to be in complete sentence form with factual support.

- In your opinion, which communications invention/creation has had the biggest impact on American culture? Why?
- In your opinion, what is the most positive aspect of mass communication development? What is the most negative? Why?
- What does the future of mass communication look like to you? Explain.

A class discussion of the questions will follow with students sharing and discussing their various answers.



America's Greatest History Attraction

High School Lesson Plan 8

Kristin DeGross, University Prep, Detroit, MI

Lesson Title:	When Did Housework Become “Easy”?
Grade Level:	High School US History
Overview:	Students will engage in hands on experiments, readings, and a visit to Greenfield Village to determine how the industrialization of housework affected family life.
Central Question:	How do the inventions of “labor saving devices” change daily life for hardworking Americans?
Learning Objectives:	TSSBAT: -Predict/Compute how long household tasks take to complete using pre-industrialized and industrialized methods. -Define important terms relating to the industrialization of housework. -Interpret/Summarize reading relating to industrialization. -Critique the implementation of labor saving devices in America.
Assessment:	Students will be assessed in the following ways: -Small group questioning during experiments -Large group Q & A session following experimentation -Individual note taking assessment following reading -Individual essay at conclusion of lesson
Key Concepts:	Labor saving devices, Shift in gender roles, Change to market economy
Evidence/ Sources:	Sewing machine 4” squares of cloth needles and thread mortar and pestle dried corn

food processor

computer

child's craft potholder "loom"

experiment recording chart

Smartboard

Dictionaries

Reading selection and vocab sheets (*More Work for Mother* by Ruth Schwartz Cowan, pp 5-7, 40-45, 47**)

student notebooks

Greenfield Village

Blue Book essays

Duration: 4 days (Two 60 minute class sessions, 1 field trip to Greenfield Village, one 60 minute class session)

Instructional Sequence: Day 1:
T: Give students chart to record experiments and split into small groups. (There are 3 stations: Have multiples of each station if possible to keep groups small)

Station 1: sew 2 squares of cloth together by hand VS. sew using a machine

Station 2: grind corn using a mortar and pestle VS. using a food processor

Station 3: weave potholder (a substitute for weaving cloth) VS. a computer lookup of distance to nearest store that sells cloth.

**Completing these stations requires using sewing machines, computers, and mortar and pestles that may need to be borrowed from a home ec. classroom if possible.

Ss: Complete each station using a stopwatch. Record onto charts.

T: Monitor each group and change stations when each group is completed. Upon completion of all stations, bring class together and record averages of all groups onto a large chart. Discuss results.

Lead into discussion/Q &A session

Ss: Participate in discussion with some of the following questions:

What amount of a person's time do you think was spent doing these types of chores by hand?

How does the invention of labor saving devices change all this?

What new jobs or businesses might have been created from these L.S.D's?

What other home inventions might have changed daily life?

T: Record responses on board/chart paper for further review.

Ss: Should be reminded to record important discussion threads as well.

Day 2:

T: Have students meet back in small groups prepared either with the internet or a dictionary. Give students a list of vocabulary words to be looked up and recorded.

Ss: Need to record and share answers.

T: Hand out reading and instruct students to do two things:

1: Highlight vocab words in reading

2: Take notes on reading in an outline format

**Lesson can be completed in different ways depending on level of students and time allotted in classroom:

A. Give students a note outline format to use to instruct note taking. Go over format and answers at the end of the reading.

B. Let students take notes on their own (using only half of their notebook sheets in a T chart format), while using a large group format at the end of the lesson to go back over the reading a second time. At this time, use an overhead to re-read the selection, and use the other side of the t-chart to fill in any notes/important information students may have missed the first time.

Day 3:

- Plan a trip to Greenfield Village to see specific sites: Daggett Farm, Loranger Grist Mill, Tripp Sawmill, Plymouth Carding Mill.
- Have students bring notebooks to take notes on what types of preindustrial and industrial methods of work were used at each site.

Day 4: Culminating Assessment:

- Have students write an essay, using all of their sources from the past three days. Students must use an example from each day (experiment, reading, site visit) to complete the essay question:
How did the invention of labor saving devices change household work for Americans?

- Anticipated Challenges:** Some students will have issues dealing with the following:
1. Use of sewing machine. Teacher should station self close to this station at the beginning of each rotation for assistance. Teacher might also want to place small directions next to appliances.
 2. Understanding of reading. Lower level students may need assistance in reading selection. Teacher can choose to read along with students to help clarify, or choose a simpler reading for those in need.
 3. Taking notes while at Greenfield Village. Teacher may choose to create chart/document that details what specific pieces of information should be searched for/written down.

- Curriculum Links:** Michigan High School Content Standards:
- I.1.2
 - I.3.1
 - II.1.2
 - II.4.3
 - IV.4.4
 - V.2.2

Group Members: _____

Directions: At each station, use the stopwatch to record how long it takes you to complete each task. We will come back together in a large group to record our averages into a cumulative number!!

	By Hand	By Machine
Sewing (2 squares together)		
Grinding corn for flour (1 cup)		
Weaving fabric (potholder)***		

***When calculating this, there are a few things you need to do:

A: To calculate the amount of time it would take to weave fabric by hand, you will need to multiply the time it takes you to weave a 6" potholder by 24. This will be approximately the time it would take to weave 2 yards of fabric, which would be enough for a man's shirt and some scraps for rags, etc.

B: To calculate weaving fabric by machine, we're really going to look at how long it will take you to drive to the nearest fabric store to pick up a yard of fabric to sew. Use mapquest and our current location to see how long it will take to drive to the fabric store.

Name: _____

Vocabulary: Please find and record the appropriate definitions. When definitions are completed, please read the following selection and highlight the vocabulary words as they appear in the reading.

Industrialized:

Contemporaries:

Minute: (not the time)

Feudalism:

Market Economy:

Erroneous:

Unspecialized:

Alienation:

Locus:

Vexations:

Census:

Paradox:

Impugning:



America's Greatest History Attraction

High School Lesson Plan 9

Russ Irving, Pequannock Township H.S., Pompton Plains, NJ

- Lesson Title:** Mass Production – For or Against the Masses
- Grade Level:** U.S. History II - Grade11
- Central Questions:** Do studies of mass production have to begin and end with Henry Ford?
- Does the Industrial Revolution ever end?
- What are the lingering effects of mass production?
- Lesson Objectives:** Students will be able to
- Compare and contrast the contributions made to mass production by Taylor, the Gilbreths and Ford
- Analyze the positive and negative impact their work had on labor, consumers and the environment
- Assessment Tools:** Oral presentations during debate/discussion
- In class timed essay
- Time Frame:** 3 days
- Instructional Sequence:** Day 1 – Have all students read Cross and Szostak, *Technology and American Society* (pp. 214-225) to establish a common context for future discussion and writing. Divide class into three groups. Using laptops assign groups to research impact mass production has had on labor, consumers and the environment.
- Day 2 – Have groups work together to construct chart showing both positive and negative impact of mass production in their particular area of research. Have class discussion/debate Concerning the questions of whether mass production has been a net gain or loss for society and whether the answer to that will continue to be the same in the future.

Day 3 – Have students write individual timed essay as part of the district initiative to improve writing scores on state-wide tests.

Anticipated Challenges: Town is so conservative that breaking through the bias that exists toward any challenge to the accepted interpretations concerning the free market is always an issue

Curriculum Links: N.J. Core Curriculum Standards for Social Studies:
Standard 6.4 All students will acquire historical understanding of societal ideas and forces throughout the history of New Jersey, the United States and the World

Expected Outcomes: Students will be able to:
Part 9 –Evaluate the views, beliefs and impact of different social groups on a given historical event or issue
Part 10 - Evaluate how individuals, groups and institutions influence solutions to society’s problems
Part 11 – Analyze historical and contemporary circumstances in which institutions function either to maintain continuity or to promote change
Part 12 – Argue an ethical position regarding a dilemma from the study of key turning points in history

Standard 6.6 All students will acquire a historical understanding of economic forces, ideas and institutions throughout the history of New Jersey, the United States and the World

Students will be able to:
Part 11 – Apply economic concepts and reasoning when evaluating historical and contemporary development and issues
Part 13 – Evaluate how the economic system meets wants and needs
Part 14 – Analyze the successes and failures of various economic systems in meeting the needs and wants of their people
Part 15 – Evaluate an economic decision
Part 16 – Analyze and evaluate economic growth in the context of environmental conditions and sustainable development



America's Greatest History Attraction

High School Lesson Plan 10

Jeffrey Kolasa, San Clemente High School, San Clemente, CA

- Lesson Title:** Nationalism and Rise of Industry
- Grade Level:** 11th grade AP US History
- Overview:** I would give this lecture and power point during my 3rd unit (early republic unit) to describe the rising economic power (post War of 1812) in America.
- Learning Objectives:** Students will understand America's early or first Industrial Revolution and how that shaped America's character and set the stage for the 2nd or Late IR after the Civil War.
- Assessment Tools:** 50? Multiple Choice and Essay or DBQ Exams
- Duration:** 1 block period (1.5 hrs)—this lesson fits into a much larger/3 week unit
- Instructional Sequence:** Lecture w/ power pt to show pics

Lecture Notes: Nationalism and Rise of Industry

“The Most fundamental changes from 1815-1829 were economic in character!!!!”

I. America's Early Industrial Revolution

a. Northeast

- i. Manufacturing Encouraged with War of 1812 & BUS's allows for expanding credit
- ii. War of 1812 and the Embargo of 1807 (decline of foreign trade) had a ruinous effect upon mercantile enterprise in NE and NY but the War did prepared the way for a new economic prosperity since it encouraged Manufacturing...since have to since at war with the British

1. 2nd BUS (and others)

- a. 1st bank die (not renewed) for political reasons—Jeffersonians let under Madison in 1811
- b. States demanded by merchants, artisans, and farmers to create banks
- c. Madison change mind in 1816 but already 246 state chartered banks
 - i. Problem since many banks issue notes without specie backing—not sound
 - ii. Also, many “wildcat” banks over speculate in frontier lands
 - iii. These were one of the major causes of the **Panic of 1819**—
 - iv. Another was credit crisis caused by drop in world agriculture prices. Thus...
 1. Farmers unable to pay creditors and creditors unable to pay banks=banks fail OR foreclose on farms (This was INSISTED BY THE 2nd BUS→consequently, Westerners hate the BUS!!!)
 2. Panic also displays how more Americans depended on regional or national markets for their goods

2. Rural Manufacturing Begins

- a. Enclosure Mvt. in NE...since need more wool...many NE farms enclose farms for sheep to graze...rural dislocation...so move to cities or factories
- b. “Outwork or Putting Out” System works well in rural America from 1780s-1800s
 - i. Based on Euro style

- ii. Merchants at center of sys as they buy raw materials, organize workers and sell finished goods but they are surrounded by 1000s of farm families that supplied the labor force within their homes or farms
 - iii. With Embargo of 1807 → expand their output to offset loss of Brit goods
 - iv. Textiles expand slowly in Am beginning in 1780s in NE
- iii. Samuel Slater's Textile Mill—1790—Marks the beginning of the Am IR
 - 1. Slater introduced the "Spinning Frame" that threaded fabric quicker and was powered by water
- iv. GB vs. US
 - 1. Americans: had advantage over GB in that they had more natural resources
 - 2. Brits:
 - a. More cheap labor since many were landless in GB (Am will use its immigrants soon)
 - b. Low tariffs so buy Southern cotton and ship it back as a shirt
 - c. Brit companies more established and were able to lower/undercut prices to flush new American co.
 - 3. Protective Tariffs wanted by NE Manufactures
 - a. 1824 puts tariff at 35% on iron products, woolen and cotton textiles
 - b. 1828 Tariff puts at 50% but So, West and urban consumers force Congress in 1833 to begin to lower the tariff
- v. Factory Towns
 - 1. Need to improve Brit Tech
 - a. Boston Manufacturing Co.—Waltham, Mass in 1814—put all operations under one roof (cleaning, carding, spinning, and weaving).
 - b. Improvements to power looms allowed them to work quicker, safer and required less workers than Brit looms
 - 2. Need Cheaper Labor for these new mills → "Waltham Plan"
 - a. recruit 1000s of farm girls and women as textile operators
 - b. low wages but higher than maids or cooks or outwork laborers
 - c. to attract females → build dorms, and have cultural activities/school
 - d. strict curfews, no alcohol and church was mandatory to entice parents

3. “Lowell Girls” —Lowell, Mass. (1822) and Chicopee (1823) were the first
 - a. by the 1830s some 40,000 young women were employed
 - b. Change women’s ideals. One proclaimed “Don’t I feel independent!”
- vi. Labor Mvt.
 1. Strike often until a major SC hearing
 2. *Commonwealth v. Pullis* (1806)
 - a. Worker’s organizations for increased wages was illegal under American common law
 3. Still unions spring up despite legal setbacks
- b. West
 - i. Move Westward!!!
 1. After the Indian menace was stopped (with the Treaty of Greenville and Defeat of Tecumseh at Thames in 1813) move West into Ohio and Midwest
 2. Ohio’s pop in 1800=45,000 in 1820=581,000
 - ii. Land Revolution (1820 Land Law→\$1.25 per acre for only 80acres mandatory)
 - iii. Eminent Domain→Most transportation charters included this
 1. Enabled turnpike, bridge, and canal corps to take land from property owners for a reasonable price, even if the owners did not want to sell.
 2. In granting corps this power, state legs promoted the good of the commonwealth at the expense of the property rights of private citizens
 - iv. Accessibility of Markets—Transportation Revolution
- c. South
 - i. “King Cotton”→After the invention of Eli Whitney’s Cotton Gin (1793)→The New Cash Crop for the South
 - ii. McCormick harvester and John Deere’s iron plow→assist farming
 - iii. Still behind the North→per capita No=\$141 vs. \$103 in 1860

II. Transportation Revolution

- a. Roads
 - i. National (or Cumberland) Road (1811-1850)→connects Cumberland, Maryland with Illinois
 1. Federally financed road
 2. no tolls collected until Monroe veto then privately funded consx
 - ii. Lancaster Turnpike (1794)—toll road
 - iii. By 1832→2,400 miles of roads made of stone and gravel

- b. Canals (era of canal building is 1825-1840)
 - i. European Investment → 1/3 paid & States fund & private fund
 - ii. Steamboats (1807) Robert Fulton invents first
 - 1. upstream travel accessible
 - 2. expensive/slow to begin with
 - iii. Erie Canal (1825) connects Hudson R. to Great Lakes
 - 1. DeWitt Clinton, NYC governor convince the state to fund the project with outside help
 - 2. NYC is now the “gateway to the US” over Phil
 - 3. By 1840 → 3,300 miles of canals
 - 4. British investors fund
 - iv. Value
 - 1. efficient movement of low value, high weight goods
 - 2. connects East to West → 1st lowers transportation costs
 - a. example: wagon rate 30-70 cents per mile vs. Erie canal 1 cent
- c. Railroads
 - i. Early RR (Before 1860) → passenger traffic only since they are high value but light weight
 - ii. Post 1860 → begin to compete with canals with the advent of stronger engines
 - iii. 30,000 miles by 1860
 - iv. Significance=Westward expansion into the Great Plains (no canals there)
 - v. Euro investors fund ¼
 - vi. Baltimore and Ohio (B&O RR)—1828 first Am RR
 - vii. Union Pacific RR—first transcontinental RR completed in 1869
- d. Significance of Transportation Revolution...
 - i. Expands Market Econ=cheaper to ship goods and this allows for production specialization (no longer need to be self-sufficient) and Commercial Agriculture with larger markets and Industry (can trade with Mid W, NE & Euro)
 - ii. Leads to Capital Investment w/ lower inventory (since know what can send and who send to on consistent basis) + frees up capital for manufacturing & industry since not lose \$ by having goods sit in warehouse or farm
 - iii. Pushes Manifest Destiny → Westward Movement
 - iv. Steel and Coal deposits in M. West help Industry there and in Northeast
 - v. South becomes more isolated since South no longer needs north but North needs Southern cotton for Textiles. South exports cotton to Britain (price goes up so does need for slaves) and Euro for their textiles

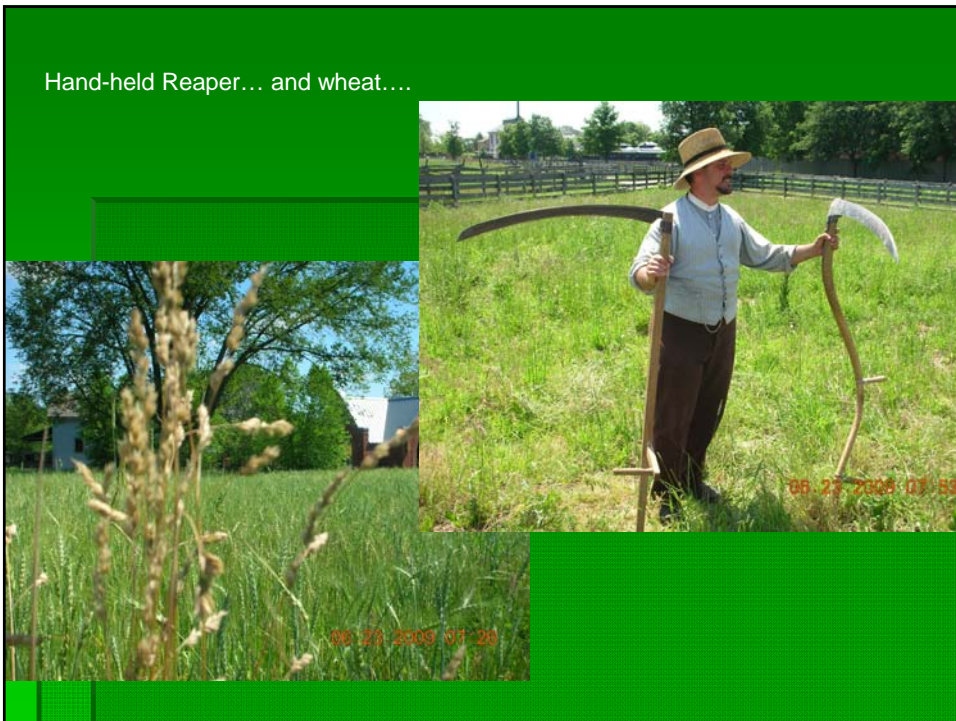
The Rise of Industry 1790-1860



The Daggett Farmhouse, 1740s

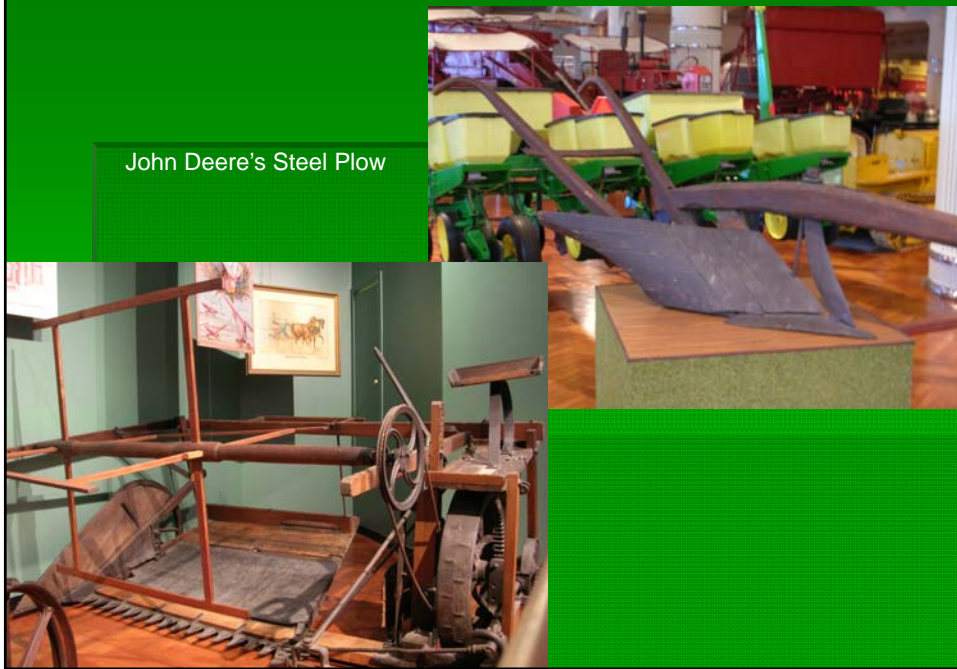


Handheld carding of wool...

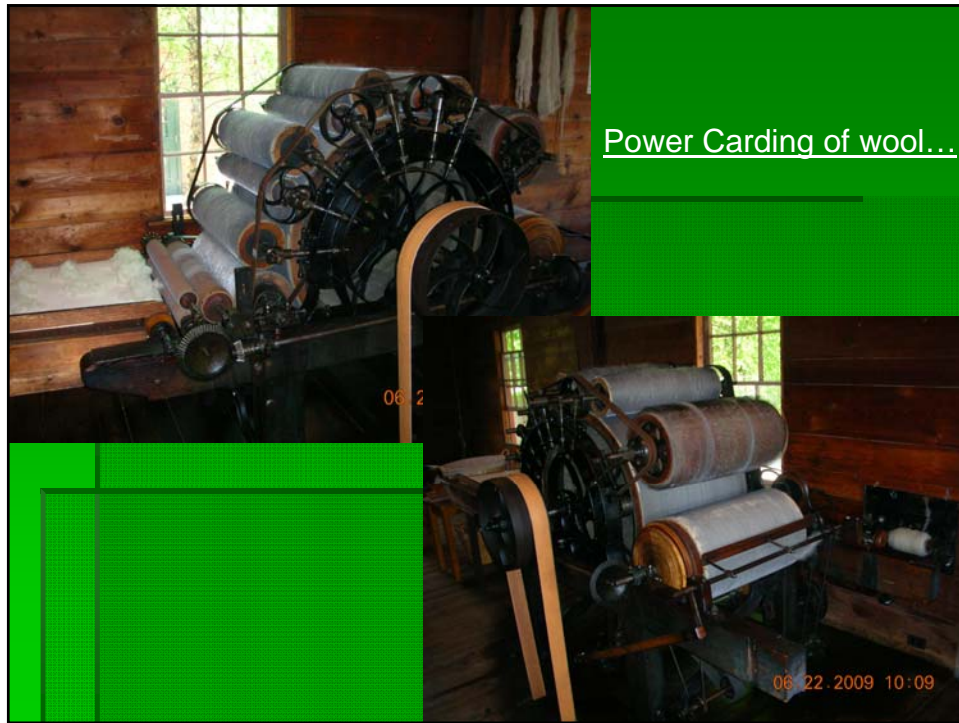


...the evolution of farm technology...

John Deere's Steel Plow



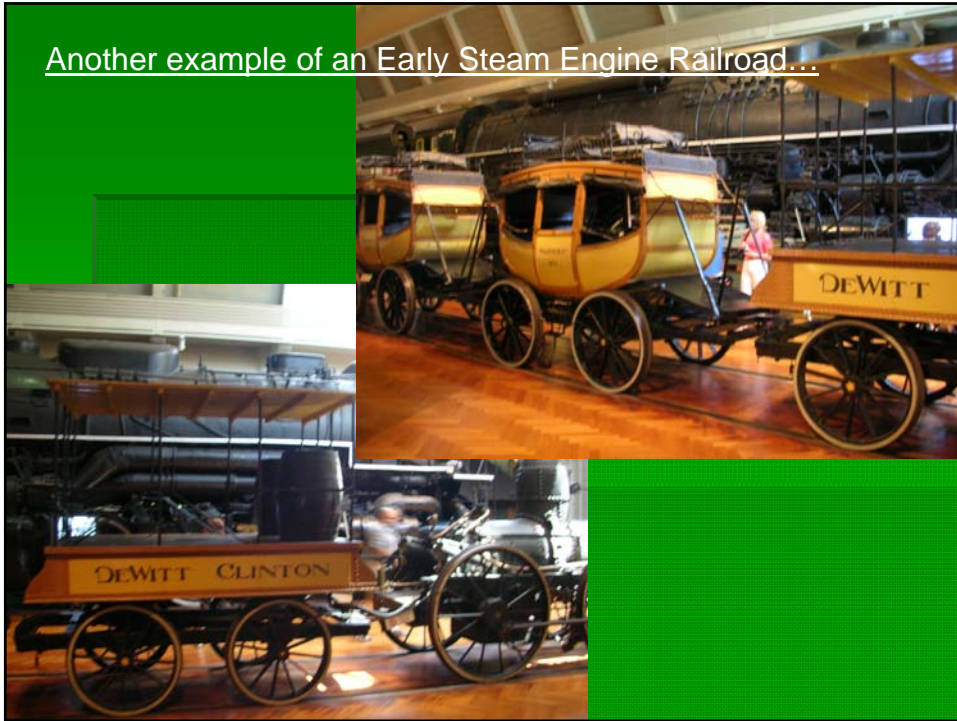
Water powered mill...







Another example of an Early Steam Engine Railroad...



Growth of Cities...horse-drawn Omnibus (public transportation)



...eventually, Omnibuses will be replace by electrical trains (the EI & subways)



America's Greatest History Attraction

High School Lesson Plan 11

Pam Martinov, J.E.B. Stuart High School, Falls Church, VA

- Lesson Title:** Edison and America's Industrial Revolution
- Grade Level:** 11th – 12th grade IB History Students
- Overview:** Students in the International Baccalaureate Program take History of the Americas (IBHA) in 11th grade and Topics in 20th Century World History in 12th grade. In May of 12th grade, students take IB History exams. The History exam consists of Papers 1-3. Paper 1 is a document –based question. The format of the questions is somewhat standardized. The documents may or may not be familiar to the students beforehand. Throughout 11th and 12th grade, students complete “practice” Paper 1's to prepare for the exam.
- Lesson Objectives:** Students will be able to:
- Analyze the documents with relation to their meaning, origin and purpose and values and limitations
 - Write focused and specific short answer essays based on the documents
- Time Frame:** Two 90 minute blocks for explanation, writing and discussion
- Materials:** One copy of paper 1 for each student
- Procedures:** First 90 minute block:
- First 30 minutes:*
 - Explain to students the procedure for Paper 1 during the IB exam
 - Explain the pattern of the questions for Paper 1 with focus on what is exactly being asked
 - Answer questions about Paper 1
 - Last 60 minutes:*
 - Students will complete Paper 1

Second 90 minute block:

Pass out papers randomly to students

Review expected answers for Paper 1-students should make comments about strengths and weaknesses of each answer in margins. Highlight items in question which are mentioned as part of an expected answer. Assign points for each question.

Return papers to the writer and answer any further questions.

Standards:

Virginia and U.S. History:

VUS.1 The student will demonstrate skills for historical and geographical analysis and responsible

VUS.8 The student will demonstrate knowledge of how the nation grew and changed from the end of Reconstruction through the early twentieth century by-

a) explaining the relationship among territorial expansion, westward movement of the population, new immigration, growth of cities, the role of the railroads, and the admission of new states to the Union;

b) describing the transformation of the American economy from a primarily agrarian to a modern industrial economy and identifying major inventions that improved life in the United States;

Learning Objectives:

The student will demonstrate skills for historical and geographical analysis, including the ability to

a) identify, analyze, and interpret primary and secondary source documents, records, and data, including artifacts, diaries, letters, photographs, journals, newspapers, historical accounts, and art to increase understanding of events and life in the United States;

b) evaluate the authenticity, authority, and credibility of sources;

e) communicate findings orally and in analytical essays and/or comprehensive papers;

f) develop skills in discussion, debate, and persuasive writing with respect to enduring issues and determine how divergent viewpoints have been addressed and reconciled;

h) interpret the significance of excerpts from famous speeches and other documents.

International Baccalaureate History of the Americas

Paper 1

Document Based Question: Edison and America's Industrial Revolution

Read all of the documents carefully. You will have 5 minutes of reading time. Read all of the documents carefully. You may write on the following pages. Answer the four questions. You have one hour (60 minutes) for Paper 1.

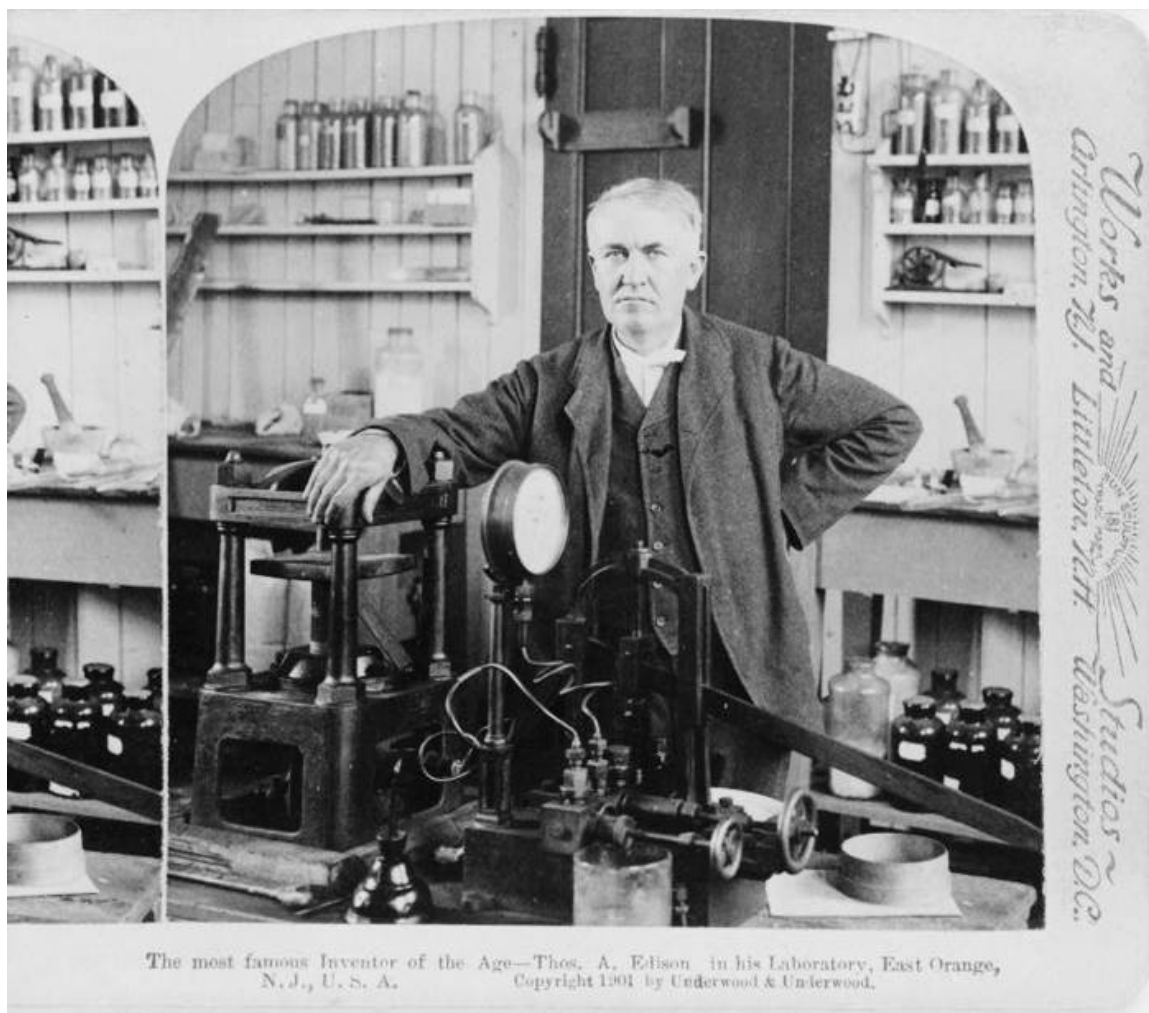
Paper 1-Edison and America's Industrial Revolution

Document A

"Edison's well-known disregard for the 9 A.M. to 5 P.M. discipline of work was an example of the **effective management style that came out of the artisan culture** of the machine shops. The eccentric hours of working at the laboratory derived from the pre-industrial tradition of the shop. Craftsman worked when they wanted and preferred variety to monotony in their work life. Much has been written about Edison's ability to go without sleep for long periods of time. His workers often stayed up all night with him. Work at the laboratory took no heed of the clock."

Andre Millard. "Machine Shop Culture and Menlo Park" included in Working at Inventing: Thomas A. Edison and the Menlo Park Experience (p. 57) edited by William S. Pretzer, Baltimore, The Johns Hopkins University Press, 2001.

Document B



http://www.americaslibrary.gov/aa/edison/aa_edison_subj_e.html

Document C

"He had no hobby, cared for no sort of amusement of any kind and lived in utter disregard of the most elementary rules of hygiene" "His method was inefficient in the extreme, for an immense ground had to be covered to get anything at all unless blind chance intervened and, at first, I was almost a sorry witness of his doings, knowing that just a little theory and calculation would have saved him 90% of the labour. But he had a veritable contempt for book learning and mathematical knowledge, ***trusting himself entirely to his inventor's instinct and practical American sense.***"

Nicholas Tesla from the New York Times, October 19, 1931 (the day after Edison died)

Document D

"In the development of electrical industries, the name Thomas A. Edison stands above those of other inventors. Edison invented the phonograph in 1877 and the first successful incandescent lightbulb in 1879. Altogether he created or perfected hundreds of new devices and processes, including the storage battery, Dictaphone, mimeograph, electric motor, electric transmission and the motion picture. Edison thus demonstrated the significance of "research and development" activities to business expansion."

George Brown Tindall and David Emory Shi. America A Narrative History. New York: W.W. Norton and Company, 2007. page 752

Document E

"I have not failed. I've just found 10,000 ways that won't work."

"Genius is one percent inspiration and ninety-nine percent perspiration."

"Many of life's failures are people who did not realize how close they were to success when they gave up."

Quotes from Thomas A. Edison

http://www.brainyquote.com/quotes/authors/t/thomas_a_edison_2.html

Questions:

1. (a) In Document A, what does "*effective management style that came out of the artisan culture*" mean? [2 points]
(b) In Document C, what does, "*trusting himself entirely to his inventor's instinct and practical American sense.*" mean? [2 points]
2. Compare Documents A and E as to the reasons given for Edison's successes.
3. With reference to origin and purpose, what are the value (s) and the limitation(s) of Documents B and D for a historian? [5 points]
4. Using your own knowledge and the documents, why was Edison successful in inventing so many new devices and processes? [6 points]

Summarized Suggested Answers:

Questions:

1. (a) In Document A, what does “*effective management style that came out of the artisan culture*” mean? [2 points]

Edison’s management style was flexible. He made it possible for his workers to determine their own hours. He also allowed them to work on more than 1 project at a time.

- (b) In Document C, what does, “*trusting himself entirely to his inventor’s instinct and practical American sense.*” mean? [2 points]

In Tesla’s opinion, Edison did much by instinct and trial and error. He felt that Edison would be more efficient if he relied more on “book learning”.

2. Compare Documents A and E as to the reasons given for Edison’s successes.

Document A indicates that Edison was successful at Menlo Park because of the freedom and Flexibility he allowed his workers.

Document E indicates that Edison felt that hard work and tenacity played a large part in his success. It was important to work on a project until success was achieved.

3. With reference to origin and purpose, what are the value (s) and the limitation(s) of Documents B and D for a historian? [5 points]

Document B is a photo of Edison taken in 1901 at the Menlo Park laboratory. It represents a fraction of a second in time. Its purpose is to show Edison in his workplace. The value of a photo is it is a primary source, that one may interpret it without regard to other interpretations. However, photos may be staged and altered to present a certain viewpoint.

Document D is a summary of Edison’s accomplishments from a secondary source. It was written in long after Edison’s death, so there is perspective on his accomplishments as related to the 19th and 20th centuries. As a secondary source, it is subject to the interpretations of its authors.

4. Using your own knowledge and the documents, why was Edison successful in inventing so many new devices and processes? [6 points]

Student’s own knowledge and...

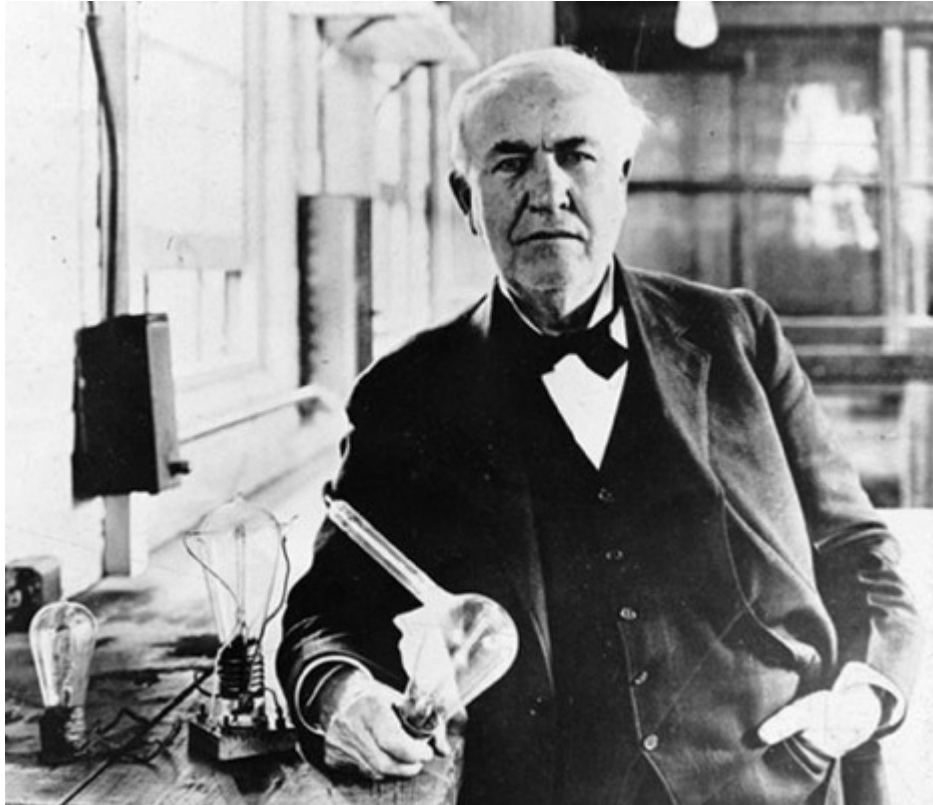
Document A- Edison’s flexibility and management style with his workers

Document B-Edison surrounded himself with the materials and people that would enable him to do his experiments at Menlo Park

Document C- Edison had an inventor’s instinct and practical sense

Document D-Edison created a lab for “research and development” which led to discoveries even beyond what he was searching for

Document E- Edison never gave up—and idea would invariably lead to much work to bring it to realization.



http://www.archives.gov/exhibits/american_originals_iv/images/thomas_edison/thomas_edison.jpg



America's Greatest History Attraction

High School Lesson Plan 12

Dave Peters, Bay Village High School, Bay Village, OH

- Lesson Title:** Industrial Impact on the Old North West
- Grade Level:** High School History
- Materials:** Industrial Impact on the Old North West Power Point

Industrial Impact on the Old Northwest

Settlement of the FIRST (not so wild) West

“America should be greatly happy by erecting a barrier against the corruptions in morals, government and religion, which now pervade all nations of Europe!”

Dr. Benjamin Rush (1745-1813)



Day 1: Land ho!

- Questions to be answered-
 - What was the Old Northwest?
 - How did the US come to possess (?) it?
 - What to do with it?
- Documents
 - [Treaty of 1783 \(Article 2\)](#)
 - Geographical features (Get State Maps)
 - **Revolutionary** Land Ordinance of [1785](#) and [1787](#)
 - [Population statistics](#)
- Now what
- Why?

Forget Europe wholly your veins throb with blood,
 To which the dull currents in hers is but mud...
 O my friends, thank your god if you have one, that he,
 Twixt the Old World and you set the gulf of a sea!
 -James Russell Lowell
 1863






Land ho: part 2

- Last of the... [Potawatomis](#)?
- Settlement patterns (Hint: Look at the [Ohio River](#))
- Plat Survey: [Seven Ranges](#)
- Immigration: Push/pull factors?
- Order of [Statehood](#)
- Fancy words: Social Economics? Demographics?
- [Census Browser](#) time (1790). Using census data (70 years worth.)
- Look for ethnic and occupational information.

Land ho: part 3

- So what does all this have in common: Bottom Line?
- Land.
- But here is the rub!
- [Forest](#) and [Prairie](#) (ah, the [grasses](#))
- What to do with 640 acres?
 - How to buy the land?
 - “Squatters?”





English enclosure from c. 1660s

What do these images mean?

Next Slide!

Welcome to Blenheim Palace: 2100 acres



Public Land Survey System (PLSS)

Township Grid

Township 2 South Range 3 West

Section 14

THEORETICAL TOWNSHIP DIAGRAM SHOWING METHOD OF NUMBERING SECTIONS WITH ADJOINING SECTIONS

36	31	26	21	16	11	6	1
1	6	11	16	21	26	31	36
12	17	22	27	32	37	42	47
23	28	33	38	43	48	53	58
34	39	44	49	54	59	64	69

Section 14 shows both normal division of the section into aliquot parts and the fractional division into government lots.

Twp 1N-1E, MI, Michigan - Toledo Strip (Subdiv. Lines)

Twp 1N-1E, MI, Michigan - Toledo Strip (Subdiv. Lines)


Twp 1N-1E and Range 1E 1st 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th 31st 32nd 33rd 34th 35th 36th

Surveyed in February 1836 by David Wright Esq.

Land ho! Culminating Discussion

- Why is “land” so important?
- Why immigrate?
- When does the farmer become producer/consumer?
- Would you choose this life style?

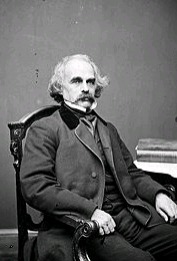
Referring to the Old Northwest “This you may take for granted that it is more Beautiful than any idea I could have formed of a country almost in a state of Nature, everything you behold is an additional Beauty.”
GR Clark 1779



Day 2: 15 Years on the Erie Canal


- Review: So what do we have?
- Land being chopped up into 640 acre sections.
- A growing eastern population.
- Today’s focus questions...
- Politically? Tomorrow, ok? What were the advances in transportation?
- How did this impact immigration patterns?
- What impact on the Old Northwest socially and economically?
- Deere and McCormick?

Nathaniel Hawthorne 1835
I was inclined to be poetical about the Grand Canal. In my imagination, De Witt Clinton was an enchanter, who had waved his magic wand from the Hudson to Lake Erie...
[Read on!](#)

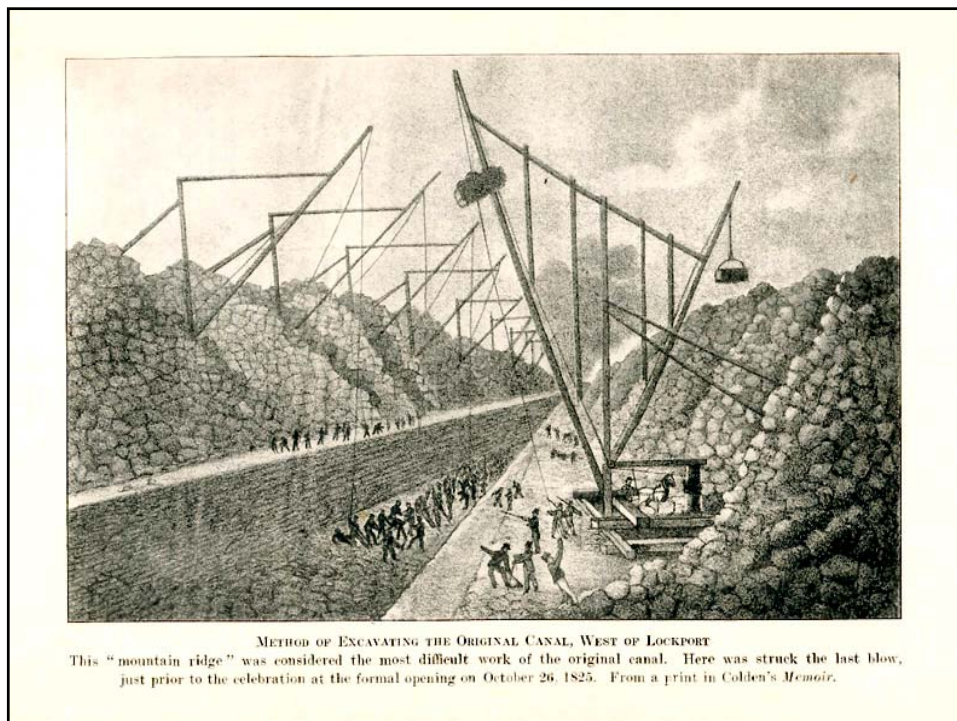


Day 2: Getting stuff there!

- It is a long walk!
 - Boston to Cleveland: 640 miles
 - Albany to Indianapolis: 810
 - Philadelphia to Louisville: 710
 - Richmond to St Louis: 860
 - But there is a problem: no roads!
- What to take?
- Transportation *revolution*.
- Got to get folks and stuff to this “new” land.
- Fed. Funded National Road
- Age of Canals



Started in 1811. To Ohio by 1818. To Illinois By 1835... so what?



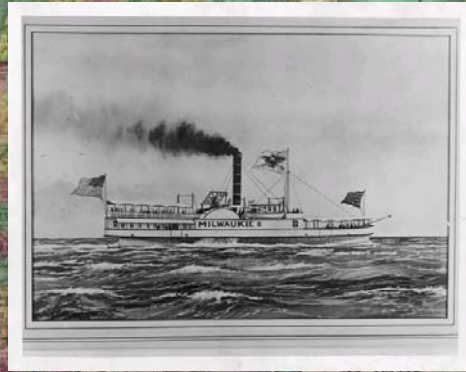
Era of Canals: Just the Facts Ma'am

- Erie Canal (1825): Cut transportation costs by 95%.
 - 363 miles. 40 feet wide. 4 feet deep. 675 feet high from east to west.
- Ohio Erie Canal (1832): Linked Great Lakes to Ohio River (T. Jefferson's idea)
 - 302 miles. 60 feet wide.
- Wabash and Erie Canal (1853). 497 miles long.
- Illinois-Michigan Canal (1848). 97 miles long.



Now what?

- Erie canal, the moon shot of its era, was a **huge** stimulus to commerce and travel.
- Canal workers?
- Immigrants?
- Settlers?
- Cost of goods?
- Possibility for farmers to become producers.?



Lake Michigan: 1832

Let's talk!

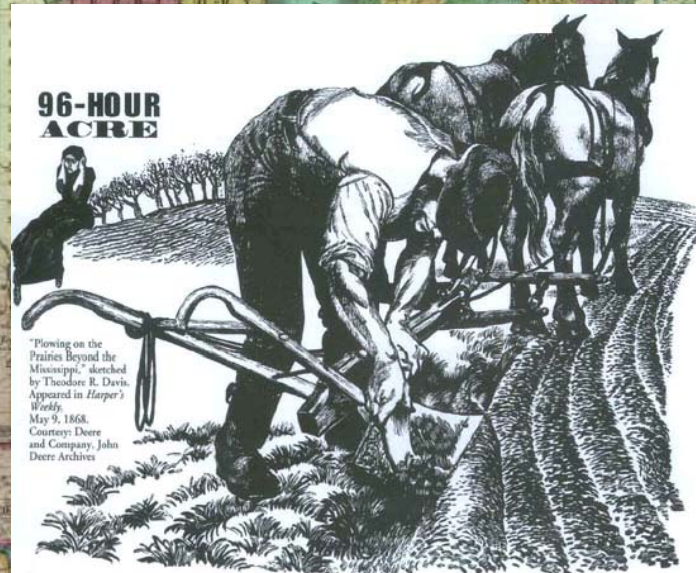


Hand made to manufactured



- The most basic need?
- A *good* plow... enter John Deere
- Review the reading

And if we have a good plow...



Day 3: (this sounds dull) Mechanization of Agriculture and the Railroads! So there!

- Review: An equation!
- Best cheap land +
- Cost effective canal system +
- Steady influx of folks +
- A desire not to live in muddy smelly log cabins =
- ?
- Today's focus questions:
- Impact of new technologies: RR?
- Frontier life: from barter to consumption/production?
- Impact on banking and commerce?
- Growth patterns?

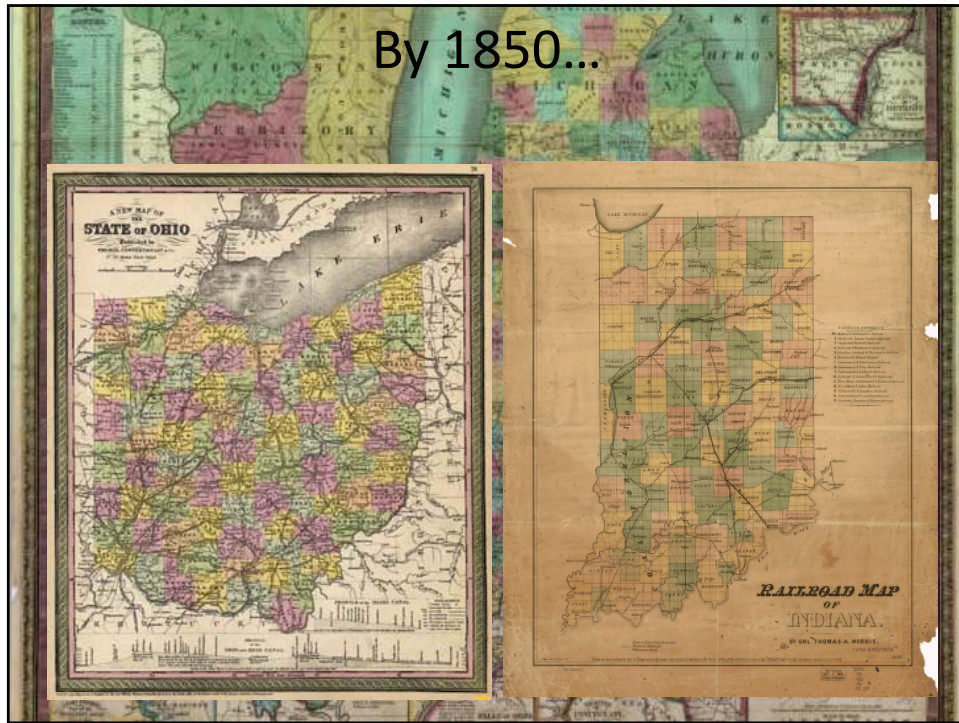


Click on Walt

I've been working on the...

- Horizontal nature of American Industrial Revolution.
- 1829 – The *Tom Thumb* (18 mph) for the B & O.
- 1831 – The *De Witt Clinton* (25 mph) pulls 3 cars in the Albany area.
- 1832 – *The American* (60 mph) in the Mohawk Valley, NY.
- 1832 – *The Atlantic* (15 mph) hauls 50 tons 40 miles.
- Construction of RRs in the Old NW started in mid-1830s, but *Panic* caused delay.
- By 1840s a growing network in Old NW
- 1850s RR?



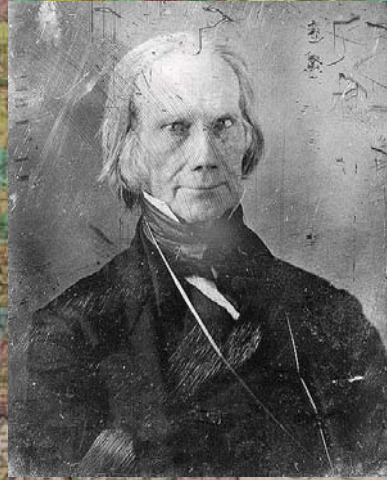


Expansion of the Railroad means???

- [Illinois](#) in 1855
- [Northern portion](#) of Old NW.
- Impact on canals?
- Impact on settlement?
 - Places with access?
 - Places without?
- Advancement of other technologies?
- Legalities of RR v. Public?
- Social-economic impact?
- Jobs?
- Politics?

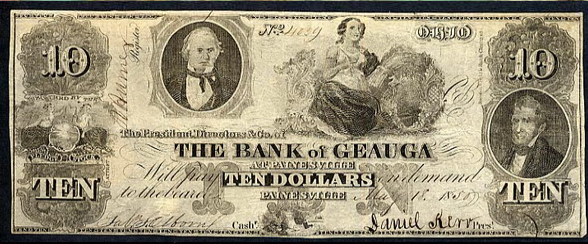
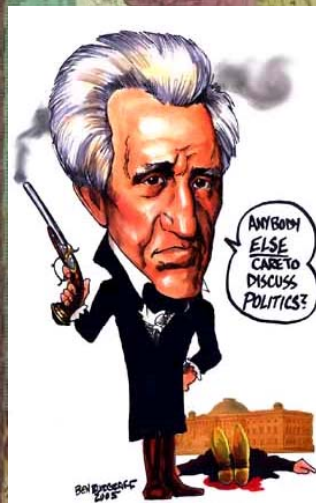
The Politics of Progress

- Review Henry Clay's American System
- Rise of the Whig Party?
 - Not the drunks portrayed.
 - Party of... Lincoln.
- 3 goals of the Whig Party.
- Jackson and the bank?
- Free Banking/Wildcat Banking Era.



Clay in 1848, 2 years before his death

Add to the confusion..



Kitchen views: The March of Progress?

Cast iron Cook Stove: Patent 1834



Impact of changes in technology and transportation?

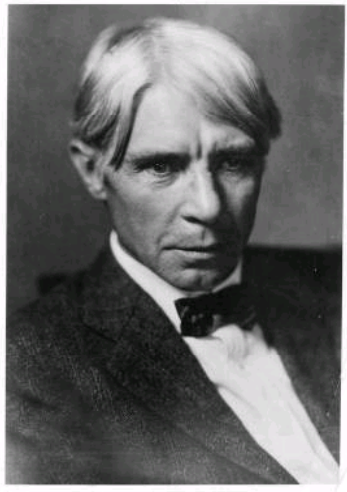
Putting it all together

- Impact of new technologies: RR?
- Frontier life: from barter to consumption/production?
- Impact on banking and commerce?
- Growth patterns?
- The Question: Positive and negative impact of new technology?




Day 4: In Other Words... Chicago

- Fertility rate in Old NW: 8 children/family.
- Continual flow of immigrants (define!)
- Expansion of technology.
- Need a place to centralize this network.
- Need to invent...
- Sears!
- **Focus Questions:**
- State of Agricultural production?
- What does the IR look like?
- Why urbanization?
- Situation of immigrant 1806 and 1906
- What does the Old Northwest look like after 100 years?
- Data? Images!!!




[Carl Sandburg's Chicago:](#)

Mass production of farming technologies



From this...



To this...

To...



Census time

- Chart total population.
- Chart total farms
- Chart people in manufacturing.
- Chart people born outside of the US.
- 1850
- 1860
- 1870
- 1880
- 1890
- Trends?

My University!
My [Census](#)
[Browser!](#)

Elsewhere... Big Steam Engines
 Circa 1853
 (So what!)



*So what? These monsters are producing GOODS!
 And Goods (in this case textiles) need to be shipped and sold!*

Urbanization means: Chicago

- Timber in Wisconsin
- Grain in Old NW and beyond!
- Hogs and Cattle?
- Influx of “new immigrants.”
- Invention (!) of the grain elevator (!).
- Creation of the meat disassembly process.
- Ultimate port and rail hub!
- Creation of *mail order*
- *Nature’s Metropolis*



Evolution of Old Northwest... from frontier to... Columbian Exposition 1893



Chicago Reality: The Jungle

- C and C Illinois immigrant in 1806 with 1906
- Relationship to land?
- Integration of community?
- Standard of living?



Subsistence Farming to...

A Few Scattering Statistics.

In a speech at the Auditorium, on the evening of October 26th, 1895, Postmaster Washington Hesing said: "Be not astonished when I tell you that the largest patron of the post-office in the United States is in Chicago—Montgomery Ward & Co."

Our receipts of mail are never less than 6,000 pieces daily, averaging a far greater number, and, in the rush season, running from 15,000 to 20,000 pieces each day.

As a forerunner of this season's *Buyers' Guide* we issued a little series of four booklets, entitled the "Seasonable Suggestion Series"—you, no doubt, received one. Of these booklets six millions were printed, or one million five hundred thousand of each series of four; probably, numerically, the largest order ever given to a printing office.


This catalogue weighs 2½ pounds. Into its construction goes 50 carloads, of 25,000 pounds each, of white paper each year. These figures are rather imposing, but the important feature of it is that they mark the shaping of the wisest economical system possible to be devised, for the *protection of the interests of the people* in the all-important matter of *Right Prices* on everything that they use.

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19



Day 4 Focus Questions

- State of Agricultural production?
- What does the IR look like?
- Why urbanization?
- Situation of immigrant 1806 and 1906
- What does the Old Northwest look like after 100 years?
- Data? Images!!!
- Tomorrow: Unit Essay

The image shows a historical map of Upper Canada and the North Western Territory. The map is titled 'UPPER CANADA' and 'NORTH WESTERN TERRITORY'. It features various geographical features, including rivers, lakes, and land parcels. The map is framed by a decorative border and includes a scale and a north arrow. The map is a detailed representation of the region's geography and land ownership at the time.



America's Greatest History Attraction

High School Lesson Plan 13

Mark Risisky, Glades Central High School, Belle Glade, FL

- Lesson Title:** Encountering Technology
- Grade Level:** 6-11
- Overview:** Students will place themselves in the shoes of someone unwittingly experiencing the Industrial Revolution in America. Includes viewing, brainstorming, discussing, writing, and reflection.
- Central Question:** What were positive and negative effects of the technology of the Industrial Revolution?
- Objectives:** Comprehending change over time
Social responsibility
Writing and critical thinking
- Challenges:** Students may not be acquainted with the tools in the photos, but that's the point!
For students to pretend they are unacquainted with their generation's own devices may be a cognitive stretch, but a healthy one at that.
- Materials:** Photos taken during the workshop of:
1. Newcomen steam engine
2. John Deere reaper or combine
3. incandescent light bulb
4. phonograph
5. Model T
- Assessment:** Read responses and upcoming test on the Industrial Revolution.
- Instructional Sequence:** 1. Show the class photos of Newcomen steam engine.
2. Ask the following questions in THIS order:
a. "What do you think it was meant to do?" (function)
b. "What could have been some of its positive effects?"
c. "What could have been some of its negative effects?"
d. LASTLY – "Let's give it a name."

3. Go through the same process for the other items.
4. Optional: Give the real information on each item, and see how correct our preconceptions and predictions were.
5. Tell the class that the Industrial Revolution gradually came into towns like ours and in this fashion, with groups being introduced to the technology and ensuing changes.
5. Writing assignment: Choose one of the following items and explain in an essay its positive and negative effects on their lives and others around the world.
MP3 player; DVD; XBOX or Wii; digital camera; cell phone with texting ability.

Curriculum Links:

Florida Sunshine State Standards

SS.912.A.3.2: Examine the social, political, and economic causes, course, and consequences of the second **Industrial Revolution** that began in the late 19th century.

SS.912.A.3.3: Compare the first and second **Industrial Revolution**s in the United States.

SS.912.A.3.5: Identify significant inventors of the **Industrial Revolution** including African Americans and women.

SS.912.W.6.2: Summarize the social and economic effects of the Industrial Revolution



America's Greatest History Attraction

High School Lesson Plan 14

Ola Schafer, Russia Local School, Russia, OH

Lesson Title: Farming and the Industrial Revolution

Grade Level: 9th-10th Grade American History

Overview: Having some knowledge of the origins of the industrial revolution, (from the current course or previously) students will explore the effects of technological innovations on agriculture and rural lifestyles from the colonial period to the present. Students will use primary and secondary source documents, photos and field trips on which to base conclusions as to how technology impacted farm size, labor, and age and gender roles by comparing farming in the colonial period, the 19th century and the 20th century. My focus is on agriculture in the northern U.S., but by using data and resources specific to your own region and adapting the lesson, similar patterns can be uncovered for all regions.

Central Question: How did the Industrial Revolution transform agriculture and rural life in America between the colonial period and present day?

Supporting Questions:

- What technology innovations became commonplace?
- How did technology alter farming operations and farm life?
- In what ways did agricultural technology affect the size of farms and the labor required to complete day-to-day tasks?
- How did the use of technology change the role of and family dynamics of rural Americans over the course of 200 years?

Learning Objectives: Students will:

1. Utilize library and internet to conduct historical research and develop research skills
2. Analyze primary source documents and secondary source materials to draw logical conclusions about the effects of the industrial revolution on agriculture. (Technology led to increasing acreage under

cultivation, the need for fewer farm laborers and more narrowly defined roles for men, women and children in rural northern U.S.)

3. Discern the value of the sources located and use the data collected to answer the questions posed.

4. Draw conclusions from observations and data collected on field trips.

Assessment Tools: During the unit, formative assessments will be teacher observation of student interaction with peers, questions posed by students to guide research and utilization of resources to organize and complete notes and records. This will determine how much guidance, direct instruction and/or redirection/review will be needed. At the conclusion of the unit students will independently construct responses to DBQs put together by the teacher from some of the data collected and selected by the teacher. Students will also write an essay in response to the central question.

Key Concepts: Technological innovations changed the way people in rural America worked; technological innovations changed social dynamics of rural families over time.

Evidence/Sources: The Henry Ford online resources at:

<http://www.thehenryford.org/exhibits/smartfun/Colonial/intro/index.html> Be a history detective and investigate the 18th century Daggett family from Coventry, CT.

<http://www.thehenryford.org/museum/agriculture.aspx> See photos of farm equipment from 19th century to modern equipment.

<http://www.thehenryford.org/exhibits/collections/default.asp>
More photos of farming and farm equipment

Field trips to living history museum villages or farms from the 18th and 19th centuries and a present day farm in your area.
Suggested sites to visit:

Greenfield Village and Henry Ford Museum, Dearborn, MI.
<http://www.thehenryford.org/>;

Hale Farm, Bath, OH.

<http://westernreservepublicmedia.org/halefarm/>

<http://cleveland.about.com/od/clevelandattractions/p/halefarm.htm>;

Sauder Village, Archbold, OH.

<http://www.saudervillage.org/home/default.asp>;

(late 19th century farm)

Johnston Farm, Piqua, OH.

<http://www.piquaoh.org/johnstonfarm.htm>;

(early 19th century frontier farm)

Conner Prairie, Fishers, IN. <http://www.connerprairie.org/>

(early & late 19th century sites)

Local and state libraries, university libraries and/or archives to gather information from county plat books, state statistics, census records, etc. to compile data for comparison.

County extension agents as a resource (They may come to the classroom to talk with your class)

Modern working family farm (Many farm families are happy to have visitors and give tours of their operation and/or answer questions)

Time Frame: 11-17 days depending on the length of your class period and whether or not the field trips are part of the experience.

Instructional Sequence: **Part 1** (3-4 days)

1. Introduce the unit...use a short story, read a letter or diary entry to hook students into the topic. Conduct a brief class discussion to review the industrial revolution's origin in the U.S. – when, where, why. Point out that by 1900 the U.S. was the leading industrial nation in the world, but the effects of the industrial revolution were felt a bit later in rural America. Pose the central question.

2. Explain to students that they will be collecting data from three historical eras – colonial period, latter 19th century, late 20th century, analyzing it and drawing conclusions to form a response to the central question.

3. Divide the class into 'research teams' of 3 or 4 students.

Distribute the Data Collection Sheet for the Colonial period and the research questions for the period. (a copy for each student). Allow time for the students to familiarize themselves with the worksheets.

4. Connect to the Henry Ford website and project the Daggett Family history detective interactive activity. Do this as a class introductory activity showing the Quicktime movies. Suggest that the students take notes on the data collection worksheets.

5. Distribute the “Daggett Farmhouse - General History” from the Collections of the Henry Ford in the Benson-Ford Research Center. [This can be ordered from the **Benson Ford Research Center, 20900 Oakwood Blvd. PO Box 1970, Dearborn, MI 48121-1970 Phone: 313/982-6020. Research.center@thehenryford.org**

Daggett Farm House Building Box Accession Number #186;; File Folder Heading: “Daggett Farm House - History, General”.] Direct the students to read the history. In their research teams have them develop responses to the guiding questions sheet and work on adding to the Data Collection Worksheet. Be sure to circulate about the room to answer questions and assist the groups in finding needed info if necessary.

6. Field trip to Greenfield Village’s Daggett Farm and Henry Ford Museum if possible...or a colonial farm museum in your region if available

7. Hold a class discussion to share information and conclusions the students have drawn regarding farming in the colonial period.

Part 2 (3-4 days)

1. Distribute Data Collection Sheet [attachment C] for the latter 19th century and research questions for this period [attachment D]. Allow students to read over the questions.

2. In the library or computer lab have students conduct research to complete the data collection worksheet and research questions. Using state statistics from the period find the acreage for given crops per county, value of agricultural produce, number of tractors, threshers, etc. Use state atlases and/or county plat books from the period to discover farm sizes, number of acres under cultivation, etc.

Search for account books, diaries, or other material from the period to analyze.

3. Field trip to Greenfield Village's Firestone Farm and Henry Ford Museum if possible.... or a 19th century farm museum or living history site in your area.

4. Provide time for students to compile and discuss the information they have collected in their teams, then hold a class discussion to share this information and draw conclusions regarding farming in the late 19th century.

Part 3 (3-4 days)

1. Distribute Data Collection Sheet [attachment E], research questions [attachment F] for the current era and suggested interview questions [attachment G]. Allow students to read over the questions.

2. In the computer lab have students conduct research on modern farming methods and machines and farm life. Again, they should search modern state statistics for agricultural production by crop per county, value of agricultural produce, current plat books, farm periodicals, etc. to find information to complete the data sheets.

3. Have the students contact and interview area farmers about their operation and family roles using the interview questions as a guide.

4. Arrange a field trip to an area family farm to see what machines and methods are used and who and how many people are involved in running the operation.

4. Allow teams to compile and discuss the data collected concerning modern farming methods, machinery and operations.

Part Four: Write Up & Assessment (2 days)

1. After teams have completed their data collection and team discussions have the teams come together for a whole class discussion. Create a wall chart of the key info collected and discuss the changes that took place in farming and family life since the industrial revolution began in America.

2. Individually, students will receive a sampling of documents and a set of questions to answer based on the documents. Finally, have students write an essay to respond to the central question. Be sure they know how many points you expect them to make in their discussion and that each point needs to be supported with data. (This could be done as a 'take-home' essay, as an in-class essay with each student utilizing the notes and data they collected or as an extemporaneous essay without materials at hand.)

**Many schools are experiencing budget woes and do not allow field trips, or your school may not be close enough to an appropriate living history museum to make a field trip a possibility. You can complete the unit without field trips although hands-on opportunities make for a more memorable experience.*

Student Project Ideas:

1. Students could create murals/diagrams of farmsteads in each century depicting the changing technology and age/gender roles
2. Students could write narratives of rural life in one or more of the times periods covered.
3. Students could create an illustrated timeline of the development of farm implements from the late 18th century to the present.
4. Students could create museum displays of agricultural artifacts (or photos of artifacts)
5. Students could extend the unit by researching music that reflects the lifestyle of rural America in each time period.

Anticipated Challenges:

1. Misconceptions about family roles on a farm in each time period may be in error.
2. The language of primary resources may make understanding difficult without teacher support or explanation. Letters and handwritten accounts from the past are often difficult to decipher. You may want to locate transcribed copies if possible.
3. It may be difficult to find some of the necessary data if access to libraries is limited or if digitized records are unavailable.

Curriculum Links:

Ohio Standards:

- **History Benchmark B;** Explain the social, political and economic effects of industrialization. Indicator 1. Explain the effects of industrialization in the U.S. in the 19th century including: a) changes in work and the workplace; c) modernization of agriculture
- **Social Studies Skills & Methods Benchmark B;** Use data and evidence to support or refute a thesis. Indicator 1. Detect bias and propaganda in primary and secondary sources of information; 2. Evaluate the credibility of sources for: a) logical fallacies, c) unstated assumptions, d) bias; 3. Analyze the reliability of sources for: b) adequate support of statements; 4. Develop and present a research project including: a) collection of data, C) construction and support of the thesis.

National Standards in World History

- **7.2.B** The student understands how industrial economies expanded and societies experienced transformations in Europe and the Atlantic basin. Therefore the student is able to: Explain how industrialization affected class distinctions, family life, and the daily working lives of men, women, and children.
- **7.5.A** The student understands connections between major developments in science and technology and the growth of industrial economy and society. Therefore the student is able to analyze how new machines, fertilizers, transport systems, commercialization, and other developments affected agricultural production in various parts of the world.

Attachments:

- A. Data Collection Sheet on Agriculture in the Colonial/Early Republic period
- B. Guiding questions for the Colonial Period
- C. Data Collection Sheet on Agriculture in the latter 19th century
- D. Guiding questions for the 19th century
- E. Data Collection Sheet on Agriculture in the late 20th century
- F. Guiding questions for the Modern Period
- G. Interview Guiding Questions
- H. Technology Research Worksheet

DATA COLLECTION SHEET
AGRICULTURE in the COLONIAL PERIOD
[Attachment A]

Farm Size (number of acres under cultivation, in pasture and in woodlot)

Crops Grown

Farm Machines commonly used

Farm Labor (who did what/ how many people were needed)

Tasks to be done and by whom

**RESEARCH QUESTIONS
for the COLONIAL PERIOD
[Attachment B]**

1. Were the number of acres under cultivation equal to the acres owned? Why or why not?
2. How many people were needed to do the farming? Were there hired hands? What jobs were the children expected to do?
3. What sorts of non-farm jobs were done? Did the wife or children work off the farm?
4. Were the tools used home-made or purchased? What sorts of tools saved labor?

YOUR QUESTIONS...?

DATA COLLECTION SHEET
AGRICULTURE in the LATTER 19th CENTURY
[Attachment C]

Farm Size (number of acres under cultivation, in pasture and in woodlot)

Crops Grown

Farm Machines commonly used

Farm Labor (who did what/ how many people were needed)

Tasks to be done and by whom

RESEARCH QUESTIONS
for the LATTER 19th CENTURY
[Attachment D]

1. How do the sizes of the farms compare to the Colonial period? How do the numbers of acres under cultivation compare to the Colonial period?
2. How does the use of tools and machines compare to the Colonial period? Were they home-made or purchased? Was there more work done by hand or machine? Why or why not?
3. Were there more, fewer or about the same number of laborers needed to complete farm tasks in the latter 19th century compared to the Colonial period? Did the laborers tend to be family members or were the laborers hired hands?
4. Did gender make a difference in who performed farm tasks? What was each gender responsible for?
5. What relationship do you see between technology, farm size and labor?

YOUR QUESTIONS....??

DATA COLLECTION SHEET
AGRICULTURE in the LATE 20th CENTURY
[Attachment E]

Farm Size (number of acres under cultivation, in pasture and in woodlot)

Crops Grown

Farm Machines commonly used

Farm Labor (who did what/ how many people were needed)

Tasks to be done and by whom

RESEARCH QUESTIONS
for the MODERN ERA
[Attachment F]

1. How do the size of modern farms compare to the other two eras? Has the proportion of cultivated land to pasture and woodlot changed?
2. How does the amount of work done by hand compare between the Colonial period and the modern era? Do you think more time is saved by the use of machines today?
3. How many people are directly involved in the day to day operation of the farm? How many of these are family? Are there separate tasks assigned by gender in the modern era?
4. What advantages do modern farm machines have over the 19th century machines?
5. In what ways do you think life has improved for the modern farm/farmer compared to the Colonial period? In what ways do you think things have not improved?

YOUR QUESTIONS....??

SUGGESTED INTERVIEW QUESTIONS

[Attachment G]

1. How long has your family been involved in farming?
2. Has the size of your farm remained the same?
3. How many laborers work on the farm? Are they all family? Do boys and girls do the same farm tasks?
4. How much of the family income comes from off farm work?
5. What types of farm machinery do you own?
6. How long do you usually keep the different pieces of farm machinery?
7. Do you maintain/repair your machinery or is that hired out?
8. How many hours do you work on an average day?
9. Do you get much time off?
10. Do you think utilizing modern machinery affects the amount of time off that you have or don't have?

YOUR QUESTIONS....??

Technology Research Worksheet [Attachment H]

Research the origins of the following farm machines. Look for the A) inventor/innovator, B) when patented, C) description of the purpose of the machine, D) picture

Machine Description of Purpose	Inventor/Innovator	patented
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PLOW

HARROW

DISC-HARROW

STEEL PLOW

SCYTHE

GRAIN CRADLE

THRESHER

REAPER

MOWER

GRAIN DRILL
CHISEL PLOW

COMBINE

SELF PROPELLED REAPER

Machine	Inventor/Innovator	patented
Description of Purpose		

STEAM TRACTOR

DIESAL TRACTOR

HAY RAKE

BALER

CULTIVATOR



America's Greatest History Attraction

High School Lesson Plan 15

Loretta Sovel, Gabriel Richard High School, Riverview, MI

- Lesson Title:** Changes in Household Technology Match Game
- Grade Level:** Adaptable to any
- Overview:** Designed to encourage students to study primary source evidence to evaluate changes in household technology and to assess the evidence for clues as to the changes in technological innovation for the household
- Guiding Question:** How has household technology changed in America and how can one use primary source evidence to assess the changes?
- Objective:** Students will:
- use primary sources to determine changes in household technology
 - contrast technological household items from various time periods
 - compare photographic evidence with written source material to assess which evidence corresponds with which written source
- Anticipated Challenges:** Students may need guidance in how to closely examine the photographic primary evidence. Students with reading difficulty may need assistance in reading the written source material.
- Materials:**
- multiple copies of written descriptions of the houses at Greenfield Village, the Henry Ford, that are the object of the assignment (specifically, the Daggett Farm, the Susquehanna Plantation, the Firestone Farm, and the Henry Ford home)
 - overhead photographs of the Daggett Farm, the Susquehanna Plantation, the Firestone Farm, and the Henry Ford home

c. multiple copies of photographs of the areas of each house, primarily the cooking spaces, which students will evaluate for technological changes and to match with the correct house described above (photographs of the following may include but are not limited to: Daggett Farm – fireplace, cooking pots and lids and tools used to remove lids; Susquehanna Plantation– living room fireplace sealed and replaced with space heater; Firestone Farm - stove and stove top with focus on multiple burners; Henry Ford's childhood home – stove)

Note: photographs can be expanded to include other household items from each house – i.e. loom/sewing machine; kitchen sink/pump/faucets; lanterns, etc.)

Assessments:

Adaptable depending on grade level, but may include:

- a. matching photographs with houses that they are taken from
- b. matching photographs with houses that they are taken from, with a written response explaining rationale for matching photograph with house (rationale to be based on time period each house is from and evidence in the photo which
- c. place the photographs in chronological order according to the time period that each represents
- d. place the photographs in chronological order according to the time period each represents, with a written explanation of the technological conditions and/or changes observed between each photograph
- e. if using multiple items from each house – match items with time period each are from; may include written assessment or rationale for matching each photograph with specified time periods

**** Note – the above assessments can be done in groups, pairs, or individually***

Instructional Sequence: Introduce students to concept of analyzing photographs of household items for evidence of technological advancement

Discuss with students the use of photographs as primary source evidence

Display on overhead photographs of each of the focus houses at Greenfield Village, with a discussion of each house

Distribute a copy of the written information of each house and a copy of the photographs of each household item

Conduct the chosen assessment from the list above

Class discussion with students, comparing which photographs they matched together, with which house, and why; what technological changes they observed within the household items in each house

Collect students' written responses as to why they matched each photograph, and what technological changes they observed between photographs



America's Greatest History Attraction

High School Lesson Plan 16

Deb Standen, St. Joseph High School, St. Joseph, MI

- Lesson Title:** Following Their Dream: Exploring the Inventors of the Industrial Revolution
- Grade Level:** 10th Grade English
- Overview:** MMC results for special education students in writing and reading comprehension were very low the past 3 years, therefore a major focus of English Resource instruction will involve focused reading and writing lessons and assessment.
- Learning Objectives:** Students will write a persuasive essay with supports students will read text; answer factual, vocabulary and inferential questions.
- Students will read about the life of an inventor of the industrial revolution from two sources, synthesis information and write a five paragraph biographical essay.
- Time Frame:** 5-7 55 minute class periods
- Learning Sequence:** 1: Persuasive Paper with supports - Who was the First in Flight: The Wright Brothers or St. Joseph's own Augustus Herring? This lesson would follow focused mini lesson on finding supports for persuasive writing and using frames as illustrated in "They Say, I Say" : The Moves that Matter in Persuasive Writing by Graff and Birkenstein. Duration 2 class periods with final draft as homework.
- Students will use data from the documents provided to persuade the reader in a multi-paragraph paper with supports from texts provided.
- Documents: Milestones of Flight 1903 Wright Flyer
<http://www.nasm.si.edu/exhibitions/gal100/wright1903.html>
The Wright Brothers-First flight 1903
<http://www.eyewitnesstohistory.com/pfwright.htm>
"First Flight in St. Joseph?"pp. 42-43. Historical Sketches of Berrien County, Volumes 3 and 4.

Robert Meyer. "A Flight back in time on Silver Beach" Herald Palladium p1 Sept 13, 1998

Assessment: 10th Grade Persuasive writing common assessment rubric (with modifications)

2 : Reading Comprehension: Students will answer comprehension and vocabulary questions from reading about Amelia Earhart. Source: *Woman Flies the Atlantic* p8&9, Old News, Dec 2007. Duration 1 class period

Assessment: 20 teachers created questions formatted in ACT style.

3: Students will read two biographical sources about an inventor or innovator from the Industrial Revolution. They will take notes from each source, synthesis information and write a biographical essay about the individual (5 paragraph minimum). Students will select from inventors of the Industrial Revolution Top 10 found at <http://americanhistory.about.com/od/industrialrev/tp/inventors.htm> (Edison, Morse, Bell, McCormick, Singer, Goodyear, Eastman, Gatling, Westinghouse, Kellogg, or Ford).

Duration 2 periods research, 2 periods writing and revision. Final draft as homework.

Assessment: 10th grade Biography common assessment rubric

Curriculum Links:

Understand and practice writing as a recursive process

CE1.3.5 Compose written and spoke essays that demonstrate logical thinking and the development of ideas for academic and personal purposes, and that convey the author's message using an engaging introduction (with clear thesis as appropriate), well-constructed paragraphs, transition sentences and powerful conclusion

CE1.3.6

Develop and extend a thesis, argument or exploration of a topic by analyzing differing perspectives and employing a structure that effectively conveys the ideas in the writing to persuade, clarify and defend a position with precise and relevant evidence; provide a clear and effective conclusion.

Standard 2.1 Develop critical reading strategies
CE2.1.7 Demonstrate understanding of written, spoken or visually represented information by restating, paraphrasing, summarizing, critiquing or composing a personal response.

CE2.1.3 understand unfamiliar words, specialized vocabulary through context clues.

CE 2.1.6 Recognize and use the defining characteristics of information text to convey ideas



America's Greatest History Attraction

High School Lesson Plan 17

Michael Stratton, San Marcos High School, San Marcos, TX

- Lesson Title:** From Edison & Ford to Today's Energy and Environmental Concerns
- Grade Level:** 11th Grade US History
- Overview:** Class will examine the lives and accomplishments of Thomas Edison and Henry Ford with special emphasis on the invention of the incandescent light bulb and mass production of the automobile by means of a power point presentation and brief writing breaks to emphasize learning points. Another power point will be presented showing how the automobile and energy businesses, as well as the government, have attempted to fix some of the current energy issues. They will then examine the current energy/environmental situation using web-based information that points to the consumer driven use of these products. In groups, students will examine, present, and debate their findings.
- Guiding Question:** What factors have led to our current energy/environmental situation that evolved from the mass-production and use of electric lights and automobiles and how can we use practical problem-solving techniques to improve energy production while maintaining our environment? How much emphasis do we place on individual freedoms (market solutions) vs. the role of the government (laws and regulations) in improving our energy situation?
- Learning Objectives:** Students will become aware of the massive economic and social benefits of Edison's and Ford's accomplishments and how the course of history has brought us to examine the current energy/environmental situation in the context of those accomplishments.
- Students will examine the law of unintended consequences regarding mass-production and mass-consumption versus government intervention in light of our current energy and environmental situation.

Students will use critical thinking inspired by the Edison/Ford legacy of practical problem-solving in addressing the controversial connections among industrialization and material (social, economic, and environmental) well-being.

Assessment:

Students will have brief writing breaks during each power point lecture to assess what they know about Edison and Ford's accomplishments and how they have impacted society, as well as how energy and automobile production has impacted our environment. Students will be asked to share their thoughts with the class in an informal discussion generated by a "stand and deliver" activity where students stand up in agreement with statements and remain seated if they disagree. Random students will be asked to defend their positions on either side.

As a final assessment, groups of students will research energy topics from various standpoints and present their findings to the class. After these presentations, students will debate the merits of each of their findings and come to a consensus regarding what kinds of action we should take as citizens and come up with an energy policy that assigns responsibility to both the government and the free market in implementing these policies.

Key Concepts:

Cause and effect of the Industrial Revolution
Changes over time
Social responsibility and the impact of technology
Core democratic values

Evidence/Sources:

The first two sources will be in the form of power point lectures. The first lecture will be on the lives and accomplishments of Thomas Edison and Henry Ford and the impact they have had on our society using photos from Greenfield Village (me in a Model T!). The second will center on the current energy/environmental situation and the remedies offered by both the free market and the government. I will use parts of the Henry Ford website power point of the Ford Rouge plant's efforts to ease the environmental impact of its water runoff as an example of free market efforts to help the environment. The students will then use internet web sites to research energy topics, specifically <sage.tamu.edu>.

Time Frame:

This lesson will take three days (block). The first to establish a framework of ideas through vocabulary, power points,

writing breaks, a quiz, and explanation of the group work to follow. The second day will center on computer research and note-taking in preparation for group presentations. The final day, students will present their findings and take part in the “stand and deliver” activity in order to generate debate.

Instructional Sequence: Students will begin with a list of vocabulary terms that will be used throughout the lesson (20 minutes). This will be followed by a power point describing the lives of Edison and Ford and their accomplishments with a brief writing break (3 minutes) after each man’s description in order to reflect on what they have just learned (30 minutes total). Students will then take a brief short answer quiz using their notes. I will then introduce some ideas about our current energy and environmental concerns that have arisen from energy production and petroleum use with the light bulb and automobile as focus material. This will be a brief power point presentation followed by another writing break (3 minutes) that will be based on what they anticipate will be a useful energy policy for the U.S. and who will decide and implement it, the government or private enterprise. The lecture, writing break, and brief discussion will take about 30 minutes. The remaining 10 minutes will be devoted to breaking students into groups of 3 or 4 and explaining the upcoming research and presentation project, giving them a chart to organize pros and cons of their research topics. Topics will include: solar energy, biomass energy, ethanol, wind energy, nuclear energy, biodiesel, cap and trade, and CFLs, etc. Students will consider economic, social, political, and environmental impacts in their conclusions. Two minutes before the bell, I will hand out “exit slips.” Students will write a quick response of what they learned in class and hand it to me as they leave the classroom. This can be done anonymously and can be used to generate a question and answer session at the beginning of the next class, refreshing the previous lesson that is at least two to three days prior due to the block schedule.

The second day is devoted to researching their topics and making presentations of their findings so that they will be ready to present and defend their positions the following day.

The final day will be for presentations and “stand and deliver” defense responses by the class. I will keep track of their conclusions on the board so students can respond to all the issues being represented and recognize where the

majority opinions lie, allowing them to come to some kind of consensus regarding an energy policy for the U.S.

Anticipated Challenges: Many of my students may not comprehend the economic or taxation aspects of their findings since many have parents who are economically disadvantaged and look to the government for their needs. The cost-benefits analyses may be over many of their heads for this reason. Also, the environment is an emotionally charged issue so that it will be difficult for some students to remain detached until all the information is presented and for this reason may argue with their hearts instead of their minds.

Curriculum Links: U.S. History Standards 6.1A and 6.1D.

Energy Policy Project

Group Members:

Period: _____

Topic: _____

Description:

PROS	CONS
<u>Economic/Practical:</u>	
<u>Environmental:</u>	
<u>Social:</u>	

Conclusions:



America's Greatest History Attraction

High School Lesson Plan 18

Robert Baker, Novi High School, Novi, MI

Lesson Title:	Why Aren't You a Farmer?
Grade Level:	10 th Grade Civics & Economics Students
Overview:	Students will be introduced to the era known as the industrial revolution. They will review the longitudinal series of improvements in this era and think in terms of labor scarcity, choice, opportunity costs and comparative advantage to explain why we are not all farmers today.
Central Question:	What major innovations occurred during this period of history that allowed farming to be largely replaced by other means of subsistence? What role did investment in physical and human capital play in increasing productivity over the course of the industrial revolution in the United States?
Learning Objectives:	Be able to identify key elements of the industrial revolution. Understand correlations between investment in capital and increases in productivity.
Assessment Tools:	Students will participate in class activities that will demonstrate understanding as well as class discussion.
Key Concepts:	Physical capital, human capital, comparative advantage
Evidence/ Sources:	Passage from Ruth Cowan's <i>The Invention of Housework</i> , pg. 33-44. Photos from my visit to Greenfield Village including images of agricultural equipment, milling, the assembly line, light, and trains. Excerpts from Martin Hershock and Douglas Hurt's PowerPoint presentations.
Time Frame:	2 -3 days

Instructional Sequence: Begin with a discussion of why we all do not need to grow our own food today. Where does our food come from? Why do we no longer farm our own land and produce many of our own goods?

Class discussion of what subsistence farming would have looked like in 1700. Lead discussion to a differentiation between family-structure and contrast with “task” and “gang” systems of slavery. Discuss the role and importance of human capital. Read passage from Cowan pgs. 33-34 and 43-44. Ask students to think about what caused farmers to move away from this lifestyle...:

What problems did they face?

What opportunities presented themselves?

Was there new competition?

What was the *opportunity cost* of moving off of the family farm?

Next, allow students to work in pairs to explore several major inventors of the industrial era. Students will receive handouts and be asked to explore the work of Robert Fulton, Cyrus McCormick, John Deere, Isaac Singer, Eli Whitney, Thomas Newcomen, Henry Ford, and Thomas Edison. They will work to learn about major inventions, short-term and long-term contributions of these discoveries to society, and also the externalities of the discoveries. Students will think about the intended and unintended consequences of the discoveries. Students will be asked to rank the importance of the following eight individuals and select the two most influential inventors that answer the question: Why do I not work on a farm today? Each student will connect the invention to its consequences and identify the ripple effects caused by the invention. Students will present their findings to the rest of the class in pairs.

Next, use a Power Point of photos to discuss the progression from man power to horse power to steam power to the internal combustion engine in farming and industry. Show how these engines changed the way work was done. Finally, discuss the innovation of the assembly line and the need for labor in urban centers. Using the terms *opportunity costs* and *comparative advantage*, discuss the decisions that individuals in the 1800s and 1900s faced when deciding on careers.

Finally, students will be asked to reflect on the lesson by writing a journal entry beginning: I am not a farmer today because....They will be asked to connect their new knowledge of industrial advances with inventions and societal changes to reflect on the brief unit.

Anticipated challenges: Students will likely struggle to understand what life was truly like before industrialization. If possible, a visit coinciding with this lesson to Greenfield Village to visit the Daggett Farmhouse, the other Massachusetts house, the Susquehanna Plantation, the Roundhouse, and the Soybean House would be extremely beneficial.

Curriculum Links: Economics Standard
1.2.3 Investment, Productivity and Growth – Analyze the role investment in physical (e.g., technology) and human capital (e.g., education) play in increasing productivity and how these influence the market.

Inventor: _____

Invention(s)/Discovery:

1)

2)

Contribution to Society at the time, and long-term impact today –



Externalities – Consequences either intended or unintended of the invention/discovery –

Inventor: _____

Invention(s)/Discovery:

1)

2)

Contribution to Society at the time, and long-term impact today –

Externalities – Consequences either intended or unintended of the invention/discovery –



America's Greatest History Attraction

High School Lesson Plan 19

Margo Bergen, Scripps Ranch High School, San Diego, CA

- Lesson Title:** Industrialization in the Kitchen
- Grade Level:** 11th grade US History
- Overview:** This is a research project in which students will determine how industrialization affected the everyday life of people, standards of living and patterns of work, by examining the changes in kitchens.
- Central Question:** How did industrialization reshape people's every day life and expectations?
- Assessment Tools:** Students will create a poster showing changes in kitchens due to industrialization, they will present oral reports detailing their findings, and write a reflection paper on the repercussions of the Industrial Revolution in changing American lives, attitudes and expectations.
- Key Concepts:**
- Availability and price of goods lead to more material goods.
 - Role of transportation in creating markets for new goods and products
 - Changing expectations of standard of living with availability of goods
 - Creating a greater division between the male and female sphere
- Evidence/Sources:** Students will read an excerpt from Ruth Cowan's More Work for Mother, Students will view images from that work in addition to viewing slides from Nancy Gabin's power point presentation showing women at work in homes. Students will also be doing research from a variety of print and on line sources, which they will be responsible for obtaining.
- Time Frame:** This project is designed to be worked on in class and at home over the course of a week. Students will be doing

research outside of class and will be given part of class periods to collaborate with their group. The remainder of the class periods will be spent working on other aspects of Industrialization of the teacher's choice.

Instructional Sequence: Day 1. Students will read an excerpt of pages 23-25 from Ruth Cowan's More Work for Mother. They will also view images of traditional American kitchens before 1800. Students will address the following questions:

What were the contents of this kitchen? (appliances, utensils, pots and pans,)

What type of food was present? How was it stored? Preserved?

Who made these things? Where were they made? How did these things get there?

Who did the labor?

How did males and females have to work together to produce a meal?

Students will then be divided into groups of four. Each group will be creating a poster showing how kitchens have evolved and transformed over time. Each poster will represent one of the following regions:

A middle class home in New York City

A plantation in Georgia

A farm in Ohio

A middle class home in San Francisco (Yerba Buena before 1848)

Each poster will cover the time periods 1830, 1865, 1898 and 1929. Each member of the group will choose one of the time periods to research and will be responsible for becoming the expert on that era.

Each student is responsible for creating a sketch/illustration of a typical kitchen for that region and time period. Each student must also produce a bibliography using recognized historic sources. (NO Wikipedia)

Students will begin researching their time period and bring their preliminary findings to the next class session. Each student must be able to answer the following focus questions for his/her time period and location:

- What were the contents of this kitchen? (appliances, utensils, pots and pans)
- What type of food was present?
- How was it stored? Preserved?
- Who made these things?
- Where were they made?
- How did these things get there?
- What was a typical meal produced in this kitchen?
- Who did the labor?
- How much time did it take to produce a meal?
- Was it still necessary for male and female household members to work together?
- In what ways does this reflect a change in gender roles or spheres of influence?

Day 2: Students will be given part of the class period, approximately 20-30 minutes, to share their information and collaborate with other students who are researching the same time period, for example, all the 1865 researchers will meet to share their findings, sources and go over the focus questions. Students will continue to research and bring in additional materials for the next day.

Day 3: Students will again be given part of the class period. They will meet with other students researching the time period, then they will subdivide by time period and region, (so the 2-3 students who are doing Ohio in 1830 will meet together, etc.) In these small groups they will focus particularly on the question of how the contents of the kitchen got there. They will need to know what methods of transportation were available, and any events that would disrupt the flow of goods. (i.e. wars) Just because something was invented does not mean that it was widely used. Students must decide what was most likely to be in a kitchen given the time period and the region. Students should finish any research and start their kitchen sketch for the next class session.

Day 4: Students will be given 10-20 minutes to meet with their small regional time period group to go over any further research. They will then be given time to meet with their original group of four to start putting their poster together.

Day 5: Students will have a few minutes to complete their poster. A group representing each region will be chosen, or volunteer, to present their poster, addressing the focus questions for each time period. Students will discuss what accounts for regional differences. (transportation, war, cost of power, etc.) Each student will then write a reflection paper addressing the following questions:

How did industrialization affect people's daily life?
How did gender roles and expectations change with industrialization?
What overall impact do you think the Industrial Revolution had on Americans' attitudes and standard of living? Explain your position.

Student Project Ideas: Students may begin this project by sketching their own kitchen and using that as a way of connecting past and present.

This project could be scaled back by eliminating the variety of regions, or comparing only two time periods.

It could be expanded, or revisited during the year, by looking at kitchens in later eras, such as the 1950s, 1980s etc.

Students could include primary sources such as photographs, diaries, recipes or advertisements on their posters.

As an extension, students could write a comparison paper examining how the impact of industrialization on everyday life is similar and different from the impact of technology on our lives today.

Students could write a position paper detailing whether the Industrial Revolution ended and the Technology Revolution began, or if technology is a continuation of Industrialization. This project could also be adapted to World History by examining the same questions for kitchens in different countries.

Anticipated Challenges: The biggest challenge will be finding the resources and determining how transportation, wars, etc. limit how goods were distributed.

Curriculum Links: This project supports that California State History Framework, specifically the standards of how the Industrial Revolution changed the lifestyles of people, and the role of transportation in industrialization. It also touches on the growth of consumerism and mass culture.



America's Greatest History Attraction

High School Lesson Plan 20

Darlene Bockelman, Garrett High School, Garrett, IN

- Lesson Title:** American Studies Innovation Project
- Grade Level:** 11th
- Time Frame:** The lesson on the Industrial Revolution itself will be incorporated into a larger unit on American Ingenuity and Innovation, which will involve research both at school and at the Henry Ford and spans a three week period on the block schedule.
- Curriculum Links:** State Standards Taught:
USH 2.11, 4.4, 9.1, 9.2
ENG 11.7.17, 11.7.19
- Objectives:** Students will examine the American Industrial Revolution and its impact on American society. They will also discuss the unintended consequences of the Industrial Revolution to the United States and evaluate those positive and negative consequences.
- Instructional Sequence:**
- 1) At the beginning of class, students will be asked to list 5 things that they use on a day-to-day basis that were not available 5 years ago. After compiling the lists, we will discuss why those items were manufactured (Hopefully, students will respond to fill a need, to make life more comfortable, etc.) We then will discuss that Americans have traditionally solved problems and met needs through ingenuity and innovation.
 - 2) Mini-lecture—overview of beginnings of Industrial Revolution, early transportation implications and farming changes as a result.
 - 3) The following day, students will then read the excerpt from *More Work for Mother* from Ruth Schwartz Cowan, and in small groups analyze the positive and negative effects of “improvements” to household “machines” both in the Eighteenth and the Twentieth Century.

4) I will pass out the Innovations Project Assignment Sheet (see attached) and go over the requirements. Students will brainstorm innovations that might provide an interesting subject for study. Discuss Henry Ford's contributions to manufacturing. We will then have time to access information from the Internet and students may begin research for their projects.

5) On-site visit to The Henry Ford. In the museum, and in Greenfield Village, students will have the opportunity to see artifacts from the Industrial Revolution and to take pictures of those innovations that fit their projects.

6) Upon returning to school, students will compile, produce, document and present their projects.

American Studies Innovation Project

It has been said that “necessity is the mother of invention,” and nowhere does that become more evident than when we study the American Industrial Revolution and innovation. We will look at the needs, the tools created to meet those needs and the people who developed those new items and new technologies. We will also examine the long-term effects of some of the innovations and the impact they have on modern society.

Our trip to The Henry Ford Museum and Greenfield Village is a part of our study of American Innovation—the genius that helped to make the United States one of the most advanced countries in the world. As you experience the celebration of that innovative spirit that is truly American, you need also to store information for the project you will do.

You are going to present an oral presentation on one aspect of American innovation. It could be innovations in agriculture, in transportation, whether by automobile, train or air, energy innovations, architectural innovations, innovations in home appliances or several others. In each of your presentations, you will trace your chosen innovation from its earliest stages through today. You will discuss the unintended consequences of your innovation and whether those consequences have proven to benefit or harm society. Then, you will form and share your prediction for the next step in the innovation. Therefore, as you tour the museum and village, you may want to jot down notes and pay careful attention to exhibits.

Your presentation must be 4-7 minutes in length, and you must use at least three visuals. The visuals could be pictures (so you might want to bring cameras—just don’t leave them lying somewhere!) postcards, posters, sketches, etc., but not only photos downloaded from the Internet or copied from books.

If you are not going on the field trip, you will do the same project. You will have sufficient time and resources to find the information you need. Everyone will need to document his or her sources.

You may use note cards, but your presentation must not be read. You will be expected to dress appropriately for a formal speech. You will go in a random order. Names will be drawn the day of presentations. Failure to go on the day your name is drawn will result in failure of the project.

Your presentation will total 140 points. Eighty points will assess content, (including visuals) sixty points will involve presentation.



America's Greatest History Attraction

High School Lesson Plan 21

James Bone, North Branch High School, North Branch, MI

- Title of the Lesson:** The Evolution of Invention
- Grade Level:** 9th grade (American History)
- Overview:** Working in teams of 3, students will complete an in-depth research project discovering what life was like before the invention, how the invention was discovered, and the impact it had on peoples' lives afterward. Teams will then look at current inventions—what we did before the invention; how the invention was discovered with a discussion of its future impact on how we live.
- Central Question:** Of all the inventions discovered during the “Industrial Revolution” which one had the greatest impact on our lives today?
- Learning Objectives:** Using transportation and communication inventions from 1866 to 1910 students will:
- 1) see what everyday life was like before transportation and communication improved;
 - 2) who and what motivated people to invent; and
 - 3) discover the impact on everyday life these inventions actually had. Finally, looking at current inventions students will consider the future impact these may have on our lives.
- Assessment Tools:** Each team of 3 will have 3 main topics of research (before invention, how invention came to be, and life after invention). Students will be responsible for clearly describing their topic using 4 to 5 facts with a recommended resource in a research paper. Together the team will present their research to the rest of the class and answer questions that may arise. Individually the student will research one current invention and give an observation as to its impact on everyday life in our future.

Key Concepts: What was the cause and effect of the Transcontinental Railroad? How did it change the face of America? What was the impact of the telegraph/telephone/phonograph on everyday life? The focus will be on cause and effect and the changes which occurred (positive, negative, both?).

Evidence/ Sources: Internet resources will be explored. Recommended sites include American-rails.com, telephonymuseum.com, privateline.com, & recording-history.org.

Books include “*Passage to Union*” by Sarah Gordon; “*Working at Inventing*” edited by William Pretzer; and “The Model T” by Robert Casey.

(Looking forward to eventually using The Henry Ford’s future transportation website!)

Time Frame: 5 72-minute class periods

Instructional Sequence: This lesson plan is designed to be used along with additional Industrial Revolution benchmarks.

First class: introduce research with driving question, explain grading rubric, get in groups, and begin research.

The next 3 periods should allow half of the period on research/writing in computer lab/media center, with the other half of period providing teachers’ material on aspects of the Industrial Revolution for all students.

The final days of the project will be in sharing what each team discovered with a final class discussion on how our lives are impacted by invention both past and present.

Student Project Ideas: Individual student research will be presented in a 3 to 5 paragraph **paper** (Introduction w/thesis, body/explanation, and conclusion). Topics/inventions to consider will be the railroads, automobile, telegraph, telephone, and phonograph. Additional topics that will also work can be the electric light bulb, motion pictures, plows/tractor, etc.

Group presentations to the class will include a poster, PowerPoint, or overhead for **visual** affect. Final discussion could be in a **debate** form as to which invention had the most impact forcing students to use factual evidence to support their stand.

Anticipated Challenges Finding information that fits what area/topic the individual student is researching is always a challenge. Many times the information is right-on but the reading level is too hard for that particular student to comprehend. I must collect as many resources at different reading levels as possible to help individual students. Students should have background in research papers and citing resources before this project or allow time to present “writing a research paper” in process.

Curriculum Links: From the Michigan U.S. History and Geography Content Expectations

Era 6-The Development of an Industrial, Urban, and Global United States (1870-1930)

6.1.1 Analyze the factors that enabled the U.S. to become a major industrial power, including...technological advances.

6.1.5 Using the automobile industry as a case study, analyze the cause and consequences of this major industrial transformation by explaining...the impact on Michigan...the impact on American society.



America's Greatest History Attraction

High School Lesson Plan 22

Brian Burak, Eppler Junior High School, Utica, MI

- Lesson Title:** Problem/Solutions with the Industrial Revolution
- Topic:** Problems solved and problems created by the early Industrial Revolution
- Grade Level:** High School-World History or U.S. History
- Overview:** Following lessons on the development and advancement of the Industrial Revolution's origins in England and spread to the United States, students will analyze possible problems the industrial revolution looked to solve, what the solutions were to those problems, and possible problems that developed from those solutions.
- Objectives:** Students will think critically about problem-solution relationships and project possible future problems created by solutions to current problems.
- Standards:** 6.2.3 **Industrialization** – Analyze the origins, characteristics and consequences of industrialization across the world by
- comparing and contrasting the process and impact of industrialization in Russia, Japan, and one of the following: Britain, Germany, United States, or France
 - describing the social and economic impacts of industrialization, particularly its effect on women and children, and the rise of organized labor movements (*National Geography Standard 11, p. 206*)
 - describing the environmental impacts of industrialization and urbanization (*National Geography Standard 14, p. 212*)
- Materials:** Textbook
Copies of Problem-Solution-Problem Worksheet
Pen/Pencil

Instructional Sequence: Opening Activity: Focus Questions

This lesson takes place after investigation of the early Industrial Revolution has taken place. Students should be familiar with the early inventions, innovations, people and events of the first Industrial Revolution with particular attention being paid to its creation in England and the issues involved.

Start by writing the focus questions on the board. Have students answer them briefly on a sheet of paper.

1. Give an example of a problem people faced that the Industrial Revolution attempted to solve. Was it successful? Explain.
2. What is a possible problem still with us today that may have been created by action(s) during the Industrial Revolution

Call on a few students to share their responses with the whole class and have students comment on them as appropriate. Wrap up this brief discussion by explaining how the focus of this lesson will be to examine problems that were solved by the Industrial Revolution and in turn the new problems created by these solutions

Procedure:

Hand out the worksheet to each student. Go over the directions and explain that someone of the boxes have already been filled in for them. Their job will be to fill in the remaining boxes based on what is already provided for them. In some cases a problem has been presented and they must provide the solution that people came up with to solve that problem and a potential problem this solution caused. In other cases they have been given the solution and it is up to them to figure out what problem that solution tried to solve and what possible future problems could arise from it. It would be good to give the students a “freebie” by doing the first one together as a class. Students should work on this for the majority of the class day. The teacher should play it by ear to see how they are progressing. Options to speed it up could include working as individuals for 20 minutes and the last 10 with a partner, or simply have them work on the entire worksheet with a partner.

For the last 10 minutes of class, bring the students back together for a debrief before they turn in their worksheets (if

you choose to collect them). Emphasize some of the amazing developments people came up with to solve problems, and in turn the new problems that resulted from it. (See the Assessment section for ideas on what to do from here). The end of the class discussion should wrap with a look at students' answers to the Focus Question regarding continuing problems today caused by the Industrial Revolution. Discuss with students how problems created then affect us all today.

Assessment:

Informal assessment can be done by circulating through the class as groups attempt to fill in their chart. Participation and effort can be observed.

Formal assessment can come from a whole class discussion. Every student/group must contribute their answers to a particular Problem-Solution-Problem scenario. Grades can be given for completion, creative/appropriate answers, explanation etc. Another option would be for the teacher to collect each student's/group's worksheet and assess similar criteria but for the whole worksheet rather than just one scenario. A third possibility would be for students to create an additional set of solutions and problems arising from the new problem in the final column on their sheet. For example, on their sheets they had to identify Problem A with Solution A that leads to Problem B. Students could be assigned to continue this pattern by creating Solution B that leads to Problem C and so on.

Further assessment could take the form of a short essay, wherein students respond to the prompt – “Was the Industrial Revolution a good thing or a bad thing? Take the point of view of two different people who would have experienced the Industrial Revolution and answer this prompt from their point of view. Examples include but are not limited to; farmers, factory workers, factory owners, government officials, soldiers, craftspeople, children, slaves (US), ship owners. Keep in mind students can use a male or female perspective for all of these. This option allows them to use information they have already started writing about from Focus Question 2.

This worksheet is to be given to students
Problem-Solution-Problem Activity Worksheet on the Industrial Revolution

As you read about historical events, it is important to evaluate people's actions in light of the need they were trying to meet or the problem that they were trying to solve through their actions. For example, in the 1700's, entrepreneurs in Great Britain established factories in order to meet the demand for cotton cloth. Establishing textile and other factories solved some problems but created new ones – the social conflicts you read about in section 1.

Directions – For each scenario described below, complete the other boxes by expressing the problem, explaining the solution and/or predicting new problems created by the solution(s).

Problem /Issue	Solution	Possible Problems Created by the Solution
1.	Cottage industry workers move from rural areas to cities	
2. The water powered loom invented in 1787, was successful, but only allows for factories near streams and rivers where water power can turn the wheel		
3. Factory owners wanted to use their new machines constantly	Workers were forced to work in shifts	
4. America is a large country that needs transportation to link it and move goods across the nation	Thousands of miles canal are built to connect the nation using Fulton's Steamboat	
5.	People migrate to the United States or move to cities to seek food and jobs increasing the percentage of people in cities by as much as 150%	
6. The transition to city life and manufacturing jobs is not easy. Conditions in factories are poor and many employ women and children for extremely low wages		



America's Greatest History Attraction

High School Lesson Plan 23

Brian Burak, Eppler Junior High School, Utica, MI

- Topic:** Experiencing the Assembly Line (adapted from History Alive!)
- Grade Level:** High School World or US History
- Overview:** Students will simulate work as an independent artisan and compare it to work in a simulated assembly line activity. It is written as an opportunity for two or more teachers to conduct together with combined classes. (2 day lesson)
- Objectives:** Students will compare and connect their experience with the simulation assembly line with that of a factory worker. Students will contrast the experience of an assembly line work with that of an individual craftsperson
- Curriculum Links:** 6.2.3 **Industrialization** – Analyze the origins, characteristics and consequences of industrialization across the world by
- describing the social and economic impacts of Industrialization, particularly its effect on women and children, and the rise of organized labor movements (*National Geography Standard 11, p. 206*)
- Materials:** Overhead projector
Paper/construction
Song Wilcox by Falco/ CD player
Pen/pencil
- Instructional Sequence: Opening Activity: Focus Questions**
The idea of presenting these focus questions before class as a bellwork will allow student to prepare before the activity
1. How do you think the Assembly Line affected workers around the turn of the century?
 2. How do you think the assembly line affected production?
 3. What are the advantages and disadvantages of the assembly line?
 4. What connections can you make between your experience and assembly line work?

5. How do you think assembly line employees dealt with time limitation?
6. Do you think work conditions have change on the assembly line?
7. Describe the importance of the role of a craftsperson?
8. What is the important role of a foreman?

Procedure:

Class introduction – Students will take 3-5 minutes to answer the pre-activity focus questions. After students have had a few minutes to review their thoughts on the assembly line, the teacher will remind them of a few salient details from the class reading done previously, *The Flivver King* by Upton Sinclair – workers had harsh conditions, speed was a major factor, bosses wanted efficiency etc. This book has a 10th grade readability level, so it would be perfect for our students. It is challenging, but at their grade level.

The teachers pass out a sheet of paper to all class members. Students are instructed to draw a detailed, frontal view of a person in about 5 minutes. When all drawings are done collect them and choose the best two. Divide the students into two equal groups. Arrange the tables/desks into two rows (like an assembly line). Explain to the students that they are now members of our children’s book factory. The two drawings chosen are going to be the covers of a new book being published, but because of budgetary reasons, the factory can only afford to operate one assembly line. The two assembly lines will be competing against each other to see which one produces more, quality book covers. Each member of the lines will be assigned a specific body part that they are responsible for drawing on each cover that is placed in front of them. Make sure that each worker knows exactly what part they are drawing and exactly how it should look.

When everyone is ready, begin the workday. The teachers will circulate creating simulated working conditions. Some will be foremen yelling at workers to speed up and improve their quality. Others will flash lights, direct the fan and blast the song Wilcox by Falco (full of obnoxious feedback and machinery-type sounds) to simulate the working conditions in a factory. They workers should be crowded close together, since factories tended to be very cramped. We do this for several reasons. One, factories are loud. We want them to

have trouble hearing/communicating. Two, factories had a lot of distractions that could lead to injury or slower production. The “music” provides some of the distraction. When we flash the lights on and off and shine the overhead projector at them, this will serve to further distract them and to make their “working conditions” more difficult because it was hard to see. Walking around yelling at them to pick up the pace will mess them up. They will take too long; their drawings will be awful; and they won’t have time to talk or laugh. This will put pressure on them to produce quickly. If anyone complains about the lights and the yelling, we will fire them. We will replace them with a small group of one or two unemployed workers who will be happy to do the work. The same thing will happen if anyone tries to start a union. We will quickly fire them too. The reason for the firings is that when real industrial bosses heard about union discussions they fired those involved so as not to have to deal with the changes unions demanded. If there is anyone who is doing a great job we will promote him/her. Again, this is historically consistent. Then they can walk around “motivating” the workers. After about 10-15 minutes of frenetic drawing we will end the simulation.

At the end of the lesson, we will have the students answer the assessment questions for homework. The next day, we will spend the whole hour discussing how they felt, what they thought was hard, frustrating etc. We will explain, if they were unable to determine, why we did certain things with the music, lights, and so on. We will collect their answers at the end of class, so they can use their answers for reference during the class discussion.

- Assessment and Rubric:**
1. What were the easiest/hardest parts of this simulation? Why?
 2. What did you like/dislike? Why?
 3. As a worker, would you prefer to work as an artisan or an assembly line worker? Why? If you were in management, would you prefer your workers to be artisans or assembly line workers? Why?
 4. Were the bosses “motivational”? In other words, did they make you want to work harder?
 5. How did the physical conditions of the factory affect your work? In other words, were you distracted, did it make you focus harder, etc? Explain.

6. Why do you think the bosses were so eager to get rid of disgruntled workers, especially those that wanted to unionize?

Criteria	3	2	1
Quality	Thoughts are well articulated and convey higher order thinking skill	Thoughts are clear, but could be expanded further	Thoughts are extremely basic and show little depth
Spelling and Grammar	No spelling or grammar mistakes	1-3 Spelling or grammar mistakes	3+ grammar or spelling mistakes
Understanding	Answers demonstrate the key concepts are fully understood through the use of key vocabulary words and fully developed arguments	Answers demonstrate that some concepts are understood, but some arguments lack sufficient evidence	Answers convey little understanding and weakly developed arguments



America's Greatest History Attraction

High School Lesson Plan 24

Martha Cain, Berkley High School, Berkley, MI

- Lesson Title:** Overview of the Transcontinental Railroad
- Grade Level:** 9th – 12th grade
- Overview:** This lesson provides an overview of the history and impact of the transcontinental railroad in America.
- Central Question:** How did steam locomotives develop in America? How did the transcontinental come about? What were some of its challenges? What was its impact?
- Learning Objectives:**
- The students will gain a working knowledge of the history of the locomotive in America.
 - The students will understand the development of the transcontinental railroad.
 - The students will understand the impact of the railroad in America's development.
- Assessment Tools:** During the lesson, formative assessments will be used. After the lesson, the students will create their own question and answer session to be used as part of the class review for the test or unit assessment.
- Key Concepts:**
- The steam locomotive was developed in Europe.
 - The railroad was developed in America parallel with the steamboat and became its competition
 - Railroad lines developed (particularly in the East) without government regulation and consistency
 - Two major railroad lines were granted the right to build a railroad crossing America
 - Once completed, the railroad had political, social and economic impact

Evidence/Sources: The students will use the power point, information from their textbook, class discussions, and prior knowledge for the lesson.

Time Frame: The lesson will take 1 -2 class periods

Instructional Sequence: Since this lesson can be used either as an introduction to the transcontinental railroad or as a review, the power point can be used throughout your unit on the Industrial Revolution. If used as an introduction, the students should brainstorm what they know about railroads in America, including the transcontinental railroad. Information in the textbook could be reviewed before or after the presentation.

Student Project Ideas: Students pair up with another class member and develop a list of questions regarding the railroad prior to the presentation and answer them throughout the presentation. Unanswered questions are shared with the class and then divided for homework.

Students research the steam engine including its developments (air brakes, etc.)

Students go to the media center and research primary sources on the railroad. They draw names/roles out of a hat and have to take that person's perspective on the railroad (e.g. Native American, Western Farmer, Eastern Manufacturer, etc.)

Anticipated Challenges: Although students have some working knowledge regarding railroads in America, they may have false information. A way to counteract this is to create a class list of ideas on the railroad on the board. As students come across information regarding the railroad, they put a "T" or "F" next to each item on the board.

Curriculum Links: Michigan Content Standards:
6.1 Growth of an Industrial and Urban America
6.1.1 Factors in the American Industrial Revolution
6.1.3 Urbanization
6.1.4 Population Changes

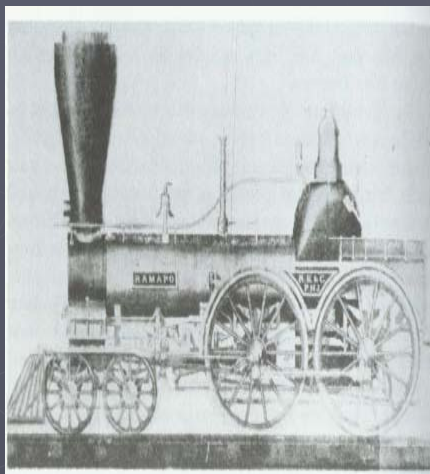
The American Railroad



Transforming a nation

First Railroads

- ▶ 1769, Scottish engineer James Watts gains the 1st patent for a practical steam engine
- ▶ England, 1825 – first railway locomotive (used to pull coal down a 9 mile track)
- ▶ Used to reduce friction in moving heavy wheeled vehicles





- ▶ Railroads and steam propulsion developed separately, and it was not until the one system adopted the technology of the other that railroads began to flourish.

American Steam Railroad

- ▶ Finished by Peter Cooper
- ▶ Called *Tom Thumb*
- ▶ Carried passengers along 13 miles of track from Baltimore to Ellicott's Mills, Maryland.
- ▶ By year's end, similar railroad roads existed in New York and South Carolina

Many railroad lines built exclusively to compete with canals in the East



Trains significantly reduced travel time

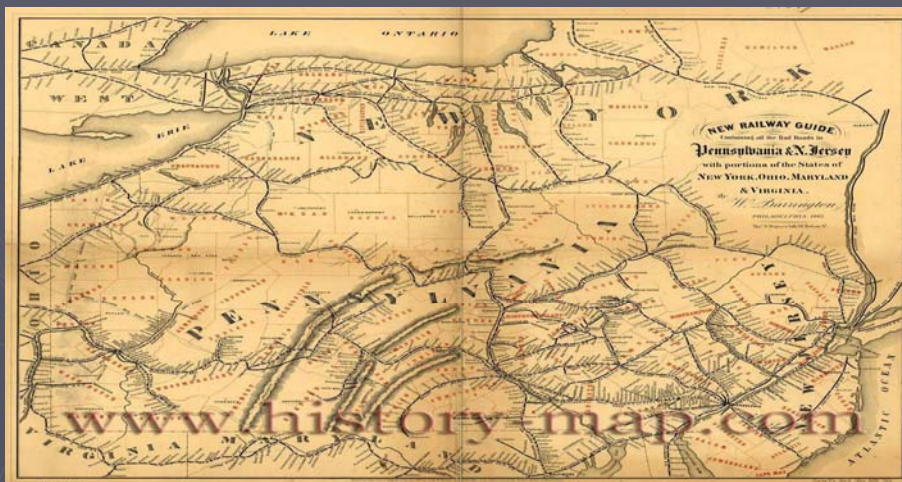
- ▶ From Cincinnati, Ohio to St. Louis, MO:
 - By steamboat, 702 miles and 3 days of travel time.
 - By railroad, 339 miles and 16 hours of travel time.
 - Allows not only for the movement of people, but expansion of consumer markets

Railroads started to developed regionally



- ▶ No government regulations
- ▶ Different railroad companies used different gauged track, ranging from 4 ft. 8.5 inches to 6 ft.
- ▶ Trains could not travel from one line to another.

Railroads developed haphazardly with no "master plan" or consistency.



American Railroad Growth

- ▶ **1840:** 2,808 Miles
- ▶ **1850:** 9,021 Miles
- ▶ **1860:** 30,000+ Miles
- ▶ **1870:** 52,922 Miles
- ▶ **1880:** 93,267 Miles
- ▶ **1890:** 163,597 Miles
- ▶ **1900:** 193,346 Miles
- ▶ **1916:** 254,037 Miles
- ▶ **1945:** 226,696 Miles
- ▶ **1963:** 214,387 Miles
- ▶ **1995:** 170,000+ Miles
- ▶ **Today:** 160,000+ Miles

Push for a national railway system

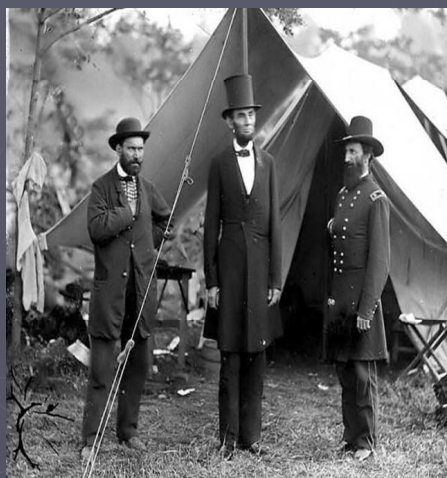
- ▶ 1845, Asa Whitney asks Congress to fund a railroad to the Pacific.
- ▶ He tries for six years to get federal approval but eventually the growing sectionalism in America prevents a national railroad from being developed.
- ▶ 1848 – As President Polk leaves office, he announces the discovery of gold in the Oregon Territory.

- ▶ Sept. 1850, California (and all its gold) becomes the 30th State
- ▶ 1859 – Discovery of gold and silver in Nevada lures many people west
- ▶ 1860 – a route through the Sierra Nevada mountains is plotted and six men form the Central Pacific Railroad Company



Pacific Railroad Bill

- ▶ Passed by Congress and signed by Lincoln
- ▶ July 1, 1862
- ▶ Endorses the idea of a transcontinental railroad
- ▶ Central Pacific to build from California eastward and created the Union Pacific Railroad Company to begin building the R.R. westward.



Railroad Bill

- ▶ Grants each railroad 6,400 acres of land and \$48,000 in government bonds per mile of railroad completed.
- ▶ The bill does not designate a meeting point for the two lines.



Central Pacific

- ▶ Begins in Sacramento, CA
- ▶ Leland Stanford, Governor and investor in the Central Pacific Railroad breaks ground on the Central Pacific on Jan. 8, 1863
- ▶ Strike their first rail on Oct. 26, 1863
- ▶ 1865 – The railroad begins to hire Chinese workers. Most of labor force at this point are Irishmen.

Slow progress in the East

- ▶ April 9, 1865, Robert E. Lee surrenders. Thousands of soldiers will be looking for work and will find it on the Union Pacific R.R.
- ▶ July 10, Union Pacific strike their first rail in Omaha, two years after the Central Pacific.

Challenges of the Central Pacific

- ▶ Whereas the Union Pacific R.R. began their building on relatively flat farmland, the Central Pacific had to dig 12 tunnels through the Sierra Nevada Mountains, averaging little more than a few inches a day.



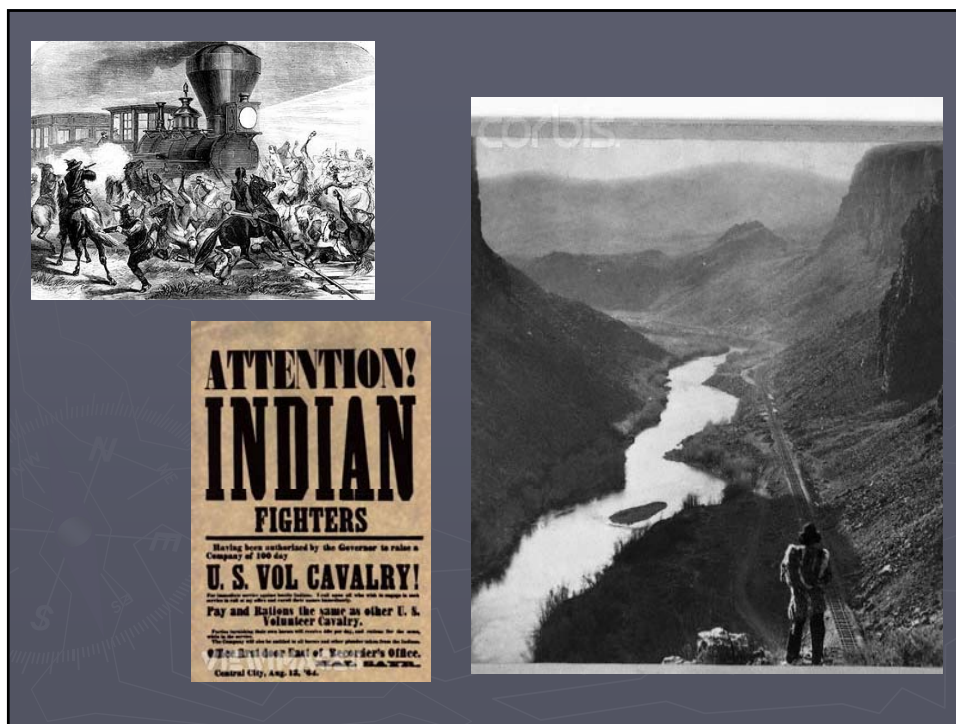
Chinese Workers

- ▶ Over 6,000 Chinese working on the R.R. by 1865
- ▶ Hard working – physically smaller than other workers so they were good to work in the tunnels
- ▶ Drank tea instead of ditch water (boiled the water), didn't drink, ate more vegetables – healthier overall
- ▶ Despite their work ethic, still viewed by many as inferior – different language, culture, food, etc.



As the railroads push their way across the American landscape, various conflicts occur with the Native Americans

- ▶ Sand Creek Massacre (November 1864): 150 Cheyenne and Arapaho are killed, mostly women and children
- ▶ Dec. 1866, Capt. Fetterman and his troops are ambushed by the Sioux
- ▶ Aug. 1867, Cheyenne Warriors pull up the track and kills all of the R.R. crew except one man who is able to flee
- ▶ Nov. 1868 – Red Cloud, a Sioux signs a treaty with the U.S. government



A meeting place, at last!

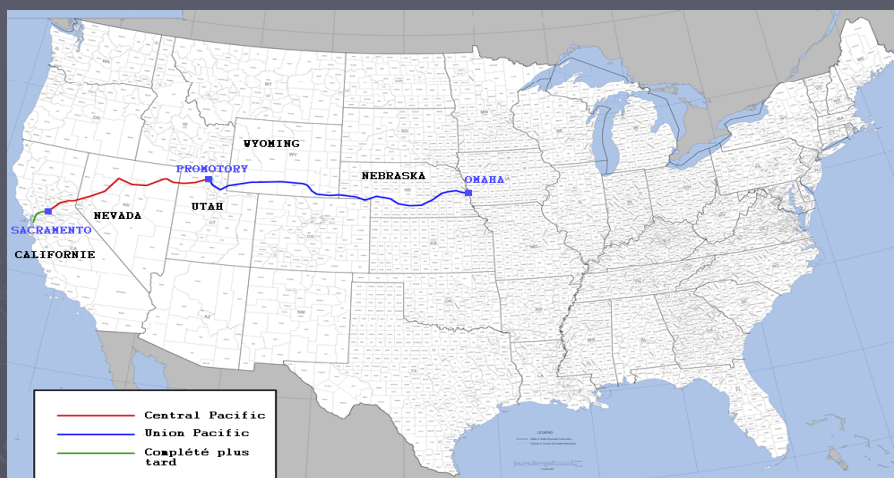
- ▶ April 8, 1869 - After much debate, the two railroads decide to meet at Promontory Summit, Utah
- ▶ A race begins between the two railroads to beat each other to the finish line
- ▶ April 28, the Central Pacific lay an unheard of 10 miles of track between sunrise and sunset.
- ▶ Unpaid workers on the Union Pacific line block the railroad line and a bridge washes out, delaying the Union Pacific by two days

"The Golden Spike"

- ▶ May 10, 1869
- ▶ Telegraph operators transmit to both coasts the hammering of the last spike
- ▶ Do you see any Chinese workers in this picture? They were not allowed in the photograph despite their contributions



At last, America became geographically united!



Consequences of the T.C.R.R.

- ▶ Movement of goods
 - Allowed new market to open up for farmers and manufactures alike. Hard goods could be shipped from the east while produce was shipped from the west.
 - By 1880, the railroad carried over \$50 million annually worth of freight.
 - The railroad's wealth attracted many unethical business men and transactions and would eventually come under stricter governmental control
 - New industries developed around the railroads

Impact Continued

- ▶ Movement of People
 - San Francisco to NY used to take almost 6 months, now it took roughly a week.
 - Served as a passageway to over 200 million acres of new settlements between the Mississippi and the Pacific ocean.
 - New towns created in the west, allowing the "native" lands to be "civilized."
 - New population lead to the creation of new states.

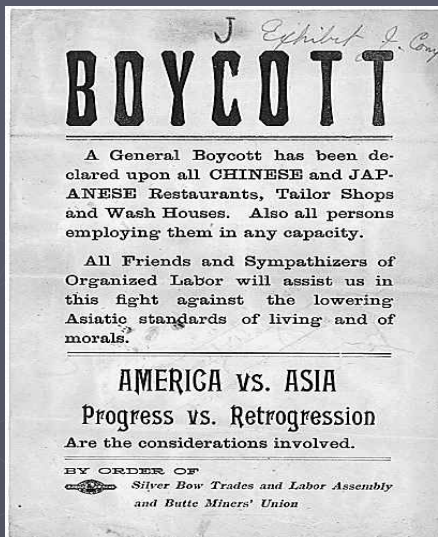
Impact on Native Americans

- ▶ Buffalo herds devastated. At one point, there were over a million buffalos on the American plains, the number dwindled to roughly 1,000 – ending a way of life for thousands of Native Americans.
- ▶ Plain Indians placed on reservations.
- ▶ Red Cloud's Treaty of 1868, guaranteeing hunting rights in the Powder River Valley is broken. The Sioux are moved to six smaller and disconnected reservations.



Chinese

- ▶ Despite their valuable contributions to the completion of the railroad, the Chinese Exclusion Act is passed in 1882, banning any further Chinese from entering America. The act is renewed in 1892 and 1904.





America's Greatest History Attraction

High School Lesson Plan 25

Nancy Jens, Anchor Bay High School, Fair Haven, MI

- Title of Lesson:** The Evolution of the Kitchen
- Grade Level:** 9-10 United States History
- Overview:** Students will compare kitchens and kitchen tools and methods used prior to the industrial revolution with those during the industrial revolution up to modern day to get a look at what everyday life may have been like for families. By making this comparison students may see that the industrial revolution affected all aspects of life.
- Central Question:** What role did the industrial revolution have on the evolution of today's kitchen and how did it affect the everyday life of families?
- Learning Objectives:**
1. Students will identify and describe various tools of cooking from five different eras of time. 1750, 1860, 1930, 1950, 2009.
 2. Students will describe how the improvement in cooking tools of the industrial revolution led to the evolution of the modern kitchen.
 3. Given the ingredients for a basic recipe, students will demonstrate the above knowledge by completing a recipe's steps for each era.
- Assessment:** Students will be given a rubric for researching information and said information will be presented in a display. Student's recipe will be graded according to a rubric given in class.
- Key Concepts:** Comparison of working implements of the following eras in history 1760, 1860, 1930, 1950, and 2009, showing how the industrial revolution improvements simplified the basic task of cooking.

Evidence/Sources: Pictures of kitchens from the Henry Ford Museum.
Resource books from the Benson Ford Research center on line for each era.

Teacher lecture on the industrial revolution

Excerpts from Nancy Gabin's presentation of the Transition from Home to Factory lecture given during the NEH workshop on the industrial revolution

School library resources and online research

Time Frame: This lesson, as presented here lasts about a week in duration but can be adapted for a shorter duration.

Day 1 Introduction of the lesson with pictures, discussion and assignment of the project itself.

Day 2 and 3 Research and information gathering

Day 4 Construction of poster and recipe.

Day 5 Presentation to class

Instructional Sequence:

1. As an introduction to this lesson, students will be placed in 4 groups and given a picture of one of the eras listed in the key concepts of this lesson. Students must identify any 4 items from the picture and describe how the item may be used. Students are also to decide what decade in time their picture depicts.
2. Each group will present their picture and descriptions in an informal discussion.
3. With their group, students will research in detail the following:
 - A. Cooking methods of each era.
 - B. Cooking utensils, tools and parts of the kitchen for each era.
 - C. Other duties needed to be performed prior to food preparation during each era.
4. Students will create a visual presentation of the above research.

5. Using the following recipe of ingredients students should write the steps to complete the recipe for each of the eras.
4 potatoes, 6 carrots, 1 pound of meat of your choosing

Challenges:

Students will need to use more than one resource (there will be a minimum requirement of 3 for this project). Students will find it helpful to use the Benson Ford resources when completing the recipe portion of the project. Cooperative learning with their peers and imagination will help in the creation of the display and recipe portion.

Curriculum Links:

1.1, 1.3, 1.4, 2.3, 4.1, 5.1, 5.2, 6.2



America's Greatest History Attraction

High School Lesson Plan 26

Angie Leedy, Davis High School, Kaysville, UT

- Lesson Title:** Assembly Line
- Grade Level:** 11th Grade
- Overview:** Students will research the impact of the assembly line on worker output.
- Materials needed:** power point of pictures from readings
video clips of working assembly line
bread
peanut butter and jelly
plates
knives
- Lesson:** Lecture with power point showing pictures and video of actual assembly line. Compare stats of worker output from before and after invention of assembly line.
- Activity:** Have students individually make peanut butter and jelly sandwiches. Sandwiches will have specific instructions as to size and shape and crust cut off etc... After timing them making 5, have groups of 3 put 5 together and time them with each person doing one part of the whole process. Time and compare.
- Home assignment:** Students will write an essay explaining why the assembly line seems so much more efficient than doing it by hand. Essay will be no more than one page, typed, double spaced with normal fonts and margins.



America's Greatest History Attraction

High School Lesson Plan 27

Scott Matson, Arlington High School, Arlington, MA

- Lesson Title:** Edison's Innovations
- Grade Level:** A.P. U.S. History
- Overview:** Students will be divided into groups. Each member of the group will be assigned a particular innovation/invention developed by Thomas Edison. Each student will research their item and report back to the group the second day with the way's in which the innovation they covered affected American technology, industry and society over future generations. The groups will then come up with a general overview on how Edison revolutionized American society using examples from all acquired research.
- Central Question:** Why were the inventions of Thomas Edison so instrumental on future developments in American technology, industry and society?
- Learning Objectives:** Cause & Effect, Technology and Innovation, Economics.
- Assessment Tools:** Each student will provide a one-page written summary of their specific innovation and how it affected American society through later years and each group will present to the class their generalized view as to how Edison revolutionized American technology, economics and society.
- Resources:** This will be a "web-quest" based project where each student will do independent internet research using databases.
- Time Frame:** 3 Days
- Instructional Sequence:** Day 1: Basic Overview of Edison's innovations from the Stock Ticker to the Motion Picture. Divide students into jigsaw groups.
- Day 2: Students perform research in computer lab

Day 3: Students report back to their groups with research. Groups will present their ideas on the overall influence Edison's innovations have on the development of American Society.

Curriculum Links:

State of Massachusetts:

USII.1: Explain the various causes of the Industrial Revolution.

B. Important technological and scientific advances.

C. The role of business leaders, entrepreneurs and inventors such as Alexander Graham Bell, Andrew Carnegie, **Thomas Edison**, J.P. Morgan, John D. Rockefeller and Cornelius Vanderbilt.



America's Greatest History Attraction

High School Lesson Plan 28

Michael Pawlicki, Universal Academy, Detroit, MI

- Unit Title:** American Industrial Revolution
- Grade Level:** 9th Grade US History
- Overview:** Students will examine America's industrial revolution by using various resources, students will work in groups for the summative unit assessment.
- Unit Question:** What have we created and what are the consequences? What changes has the industrial revolution had on the lives of Americans?
- Objectives:** Students will analyze and describe the nature, causes, and effects of America's industrial revolution and evaluate the lasting consequences of these changes in American life as well as throughout the world.
- Assessment:** Daily critical thinking questions/short answer essay
- Quizzes and tests
- Section and Chapter reviews from text
- Analysis of primary sources
- Web assignment: view Spartacus Education and profile one example of the effects of child labor
- Summative writing prompt (What are the consequences of American industrialization and urbanization?)
- Summative unit assignment: students will complete a group assignment (3 students per group). Students will use what they have learned to present topics to class.
- Girls: Imagine that you are a woman living in New England with your husband and four children. What would life be like in 1700? 1800? 1900?

Boys: Imagine that you are a farmer living in the West (concept of the west is changing over time). What would life be like in 1700? 1800? 1900?

Each student in each group will present one perspective to the class along with a visual aid.

Key Concepts:

Agricultural changes and the effect of these changes in industry

The effects of the agricultural/industrial revolution on peoples' lives

The change from rural to urban America

The benefits and the negative consequences of industrialization

The effect of specialization, the assembly line, and mass production and consumption on America

Evidence/Sources:

Teacher-created PowerPoint on the agricultural and industrial revolution (modified with photographs and images from the Henry Ford and workshop presentations) as an introduction to the concepts and topics to be covered during unit

Industrial revolution field trip to The Henry Ford/Greenfield Village

Photographs and reproductions of primary sources used throughout unit

Textbook: Holt United States History (selected portions)

United Streaming videos:

- Living History: Living During the Industrial Revolution
- The American Industrial Revolution
- The Industrial Revolution (1750-1915)

Time Frame: 5 weeks (including American industrial revolution, urbanization, and social reform movement)

Instructional Sequence: Industrial revolution PowerPoint presentation

Read portions of text including review sections

View video: The American Industrial Revolution

View video: Living History: Living During the Industrial Revolution

Field trip to The Henry Ford/Greenfield Village and accompanying assessment

View website: Spartacus Educational/Child Labor with accompanying assessment

View video: The Industrial Revolution (1750-1915)

Summative writing prompt (What are the consequences of American industrialization and urbanization?)

Summative unit assignment: students will complete a group assignment (3 students per group). Students will use what they have learned to present topics to class. Grade based on accuracy, research, organization, and presentation.

Anticipated Challenges: The most obvious challenge to comprehension of topic on the part of students will be English language issues. The use of videos, primary sources, hands-on resources, group work, and the field trip will aid students in truly understanding the concepts behind the industrial revolution.

Curriculum Links:

State objectives:

SWBAT analyze the factors that enabled the United States to become a major industrial power.

SWBAT evaluate the different responses of labor to industrial change.

SWBAT analyze the changing urban and rural landscapes.

SWBAT analyze the causes and consequences of the automobile industry as a major industrial transformation.
SWBAT describe at least three significant problems or issues created by America's industrial and urban transformation between 1895 and 1930.



America's Greatest History Attraction

High School Lesson Plan 29

Eric Shaw, Howell High School, Howell, MI

- Lesson Title:** Early American Industrialization
- Grade Level:** 10th grade AP U.S. History
- Overview:** These lessons focus on the social and economic impacts of the early Industrial Revolution on Americans through research, reading, lecture, student presentations, and expository writing.
- Central Question:** What were the social and economic ramifications of the Industrial Revolution/technological change in antebellum America?
- Learning Objectives:** Students will be able to identify the economic and social changes created by increased agricultural mechanization; identify the economic and social changes in agriculture and transportation as a result of steam power.
- Assessment Tools:** In class questioning, student presentations/skits, written responses, and an essay.
- Key Concepts:** Mechanized agriculture, early factories, steam power (farm, factory, transportation)
- Evidence/Sources:** Nancy Gabin's lecture and power point presentation
Douglas Hurt's lecture and power point presentation
Martin Hershock's lecture and power point presentation,
information from curators Marc Greuther and Jim McCabe,
The Henry Ford/NEH course pack pages 1 - 220, Passage to Union by Sarah Gordon pages 13 - 129.
- Time Frame:** Four days
- Instructional Sequence:** **Lesson 1**
As students walk into class they draw a slip of paper out of a hat with different inventions and/or inventors names on each slip.

Students go to the school computer lab and quickly research and take notes on inventions/inventors.

Return to class for one minute presentations. Classmates are to take notes that will be collected for assessment.

Homework: Read *The American Pageant* pages 297 - 318.

Lesson 2

Lecture/power point on the impact of the Industrial Revolution on agriculture, factories, and transportation.

Question and Answer session.

Homework: Prepare two minute small group skits showing the social and/or economic impact of the following: the stove, the cotton gin, plows (regional differences, changing technologies), reapers, steam engine (non-transportation), steam boat, railroads.

Lesson 3

Finish lecture/power point.

Question and Answer session.

Skits.

Lesson 4

Small group practice DBQ (Document Based Question).

Homework: Individual DBQ/Free Response Essay.

Student Project Ideas: See Instructional Sequence.

Anticipated Challenges: Students might confuse different types of machines and their uses, therefore teacher will explain differences and follow up with question and answer session to ensure student understanding.

Curriculum Links: F2.1 Describe the major trends and transformations in American life prior to 1877 including regional economic differences and similarities, including goods produced and the nature of the labor force; changes in commerce, transportation, and communication.



America's Greatest History Attraction

High School Lesson Plan 30

Greg Stock, Centennial High School, Champaign, IL

- Lesson Title:** The Industrial Revolution Newspaper Assignment
- Grade Level:** 9-12
- Objectives:**
- To develop research skills about specific events in U.S. industrial history
 - To demonstrate content knowledge about the Industrial Revolution in U.S. history.
 - To present knowledge gained in a creative and visually appealing format.
 - To choose specific events that influenced industrial and technological history and demonstrate its importance to the U.S. history as a whole.
- Time Frame:** 2-3 days in class
- Curriculum Links:**
- U.S. History, Era 4, Standard 2: How the industrial revolution, increasing immigration, the rapid expansion of slavery, and the westward movement changed the lives of Americans and led toward regional tensions
 - U.S. History, Era 6, Standard 1: How the rise of corporations, heavy industry, and mechanized farming transformed the American people
 - U.S. History, Era 6, Standard 2: Massive immigration after 1870 and how new social patterns, conflicts, and ideas of national unity developed amid growing cultural diversity
 - U.S. History, Era 6, Standard 3: The rise of the American labor movement and how political issues reflected social and economic changes

Background:

The last half of the nineteenth century saw a tremendous amount of growth in the American economy. This was largely due to a huge industrial and technological revolution that was taking place at this time. Due to the innovation of the nation, the world's history was changed as new inventions were created and implemented into American society. The new technological developments affected nearly every industry, such as transportation, electricity, textile manufacturing, steel production, and agriculture, to name a few. Clearly the Industrial Revolution's impact was vast and had strong economic, environmental, social, and political consequences for the nation and the world.

Instructional Sequence: Students will work in pairs to create a newspaper with the following premise: You are the editor of a prominent newspaper in the United States. The time is early 1900 and your publisher has chosen to do a special "Turn of the Century" edition on the Industrial Revolution focusing on technological innovations. Your task is to create a special front page edition chronicling significant industrial and technological events over the past 100 years.

Your newspaper should meet the following criteria:

1. The newspaper should include stories with details from at least four industries impacted significantly by the Industrial Revolution. Your reporter's analysis should attempt to explain how or why these particular events were important U.S. industrial and technological history.
2. Your front page should include at least two, but not more than four, sketches or pictures.
3. Your newspaper may be based in any of part of the country; however, your stories should reflect, at least in some small part, inventions and innovations that directly impacted your particular part of the country.
4. Your newspaper front page should be approximately the size of a modern, major daily newspaper, such as the Chicago Tribune or Wall Street Journal.

Your newspaper will be graded on the following criteria:

1. Historical accuracy. You should make every effort to ensure that your facts are correct and important details are included.
2. Proper style. Remember that proper grammar, writing style, etc. is important and expected.
3. Presentation. You will also be graded on your creativity, as well as proper layout of the page. You will want to make good use of the space that you have; yet, still be sure that it is easily readable for your audience.

Class time will be given for some research; however, the expectation is that the bulk of this assignment will be completed outside of class.

Resources:

There are a variety of different resources that can be used for this assignment including textbooks or web-based resources.



America's Greatest History Attraction

High School Lesson Plan 31

Cindy and Jeff Welker, Roxana High School, Roxana, IL

Lesson Title:	Innovation and Industry
Grade Level:	11-12
Time Table:	1 Week
Group Size:	20-25
Objectives:	<p>Students research and understand the impact of innovation on Industry.</p> <p>Students examine the impact of industrialization on the work force from 1880 to 1930.</p> <p>Students analyze and interpret a labor poster.</p> <p>Students understand the benefits of studying material culture.</p> <p>Students utilize an object analysis worksheet at The Henry Ford Museum to facilitate the understanding of material culture. (If not able to visit the Henry Ford Museum – visit a site in your geographic area. My students would visit The Belleville Labor and Industry Museum.)</p>
Materials:	<p><u>Technology and American Society</u> by Cross and Szostak, chapter 14.</p> <p>Worksheet I – Innovations in the Workplace.</p> <p>The Henry Ford Museum web site to research one “innovator” and to participate in a virtual tour and preview their collections: www.TheHenryFord.org.</p>

Copies of industry and Labor posters. (I have included a few samples from an online search. An excellent source is [Agitate! Educate! Organize!](#) By Lincoln Cushing which includes 250 American Labor Posters.)

A poster analysis worksheet.

“Teaching History with Material Culture” written by Janice Tauer Wass.

Curriculum Links: The activities in this lesson may fulfill the requirements for the following Illinois State Learning Standards: 15.A.4d, 15.C.4b, 15.D.4c, 16.A.4a, and 18.A.4.

Instructional Sequence: **Activity I** –Students visit The Henry Ford Museum web site choosing one “innovator” from their collection to research and report on to the class. The report must contain a one paragraph summary of the innovators contribution to the advancement of technology and may be presented in any of the following formats: poster, power point, Zine* or video. The presentation is limited to 5 minutes.

Activity II - Distribute [Technology and American Society](#) chapters 14 and 15 for students to read. Once the article is read, the classroom is divided into groups of 3-4 students. Distribute Worksheet 1 – Innovations in the Workplace. Each group will discuss and form a consensus for their responses. A spokesperson from each group will read and explain their answer. Discussion about the impact of innovation in the workplace on the American laborer will be emphasized.

Activity III – Several labor and industry poster are projected for the students to view. The American labor movement has an amazing history of graphic production, creating some of the most effective political images in the history of this country. Each poster is analyzed for historic and aesthetic elements. Questions are solicited from students to determine comprehension. A copy of a labor and industry poster and a poster analysis worksheet is given to each student to complete. The changing landscape of labor as depicted in the posters will be emphasized.

Activity IV – Students read “Teaching History with Material Culture.” Upon completion, the material is discussed emphasizing the steps of accession. Students access the Henry Ford Museum web site to take a virtual tour of the museum and to pre-view the collection. Object Analysis Worksheets are distributed. Each step in the analysis process is explained. Students choose an object from the online labor collection about which to complete an Object analysis Worksheet.

Activity V – Guided visit to the Henry Ford Museum. While at the museum, each student chooses five objects about which to complete an Object Analysis Worksheet.

Closure: Students’ Object Analysis Worksheets will be collected and filed together. Students may choose any worksheet(s) from the collection with which to write a one page “connection” paper explaining how we connect to history through objects those who came before us left behind.

* A zine is an abbreviation of the word fanzine, or magazine. It is a self-published work produced on a photocopier or any variety of colored paper stock, about a specific topic or subject. Zines are either informational or persuasive in nature.

Innovations and Industry

Worksheet I

After reading chapter 14 from Technology and American Society, discuss the following questions in your groups. Form a consensus, or a “group” answer, before writing down any response. Choose a spokesperson from your group who will share your answers with the class.

1. Many examples of innovation in machine tools and production were included in the reading. Which do you think is the most important innovation? Why?
2. Frederick Taylor believed he could improve the efficiency of production by applying scientific principles in the workplace. Was he successful? What was the impact on the individual laborer?
3. Explain Gilbreth’s method of motion study. How does it compare to Taylor’s innovations?
4. List 5 innovations introduced into American industry by the advent of personnel departments.
5. Describe 2 positive and 2 negative impacts of the assembly line on the American factory laborer.
6. Did union leaders support management’s use of scientific practice to increase productivity? (Support your answer with examples from the reading.)
7. Why did Ford implement the “\$5 day”? Did this new policy impact all of the workers? Why or why not?

Poster Analysis Worksheet

1. What are the main colors used in the poster?

2. What symbols (if any) are used in the poster?

3. If a symbol is used, what makes it:
 - a. clear (easy to interpret)?

 - b. memorable?

 - c. dramatic?

4. Are the messages in the poster primarily visual, verbal, or both?

5. Who do you think is the intended audience for the poster?

6. What does the creator of the poster hope the audience will do?

7. What purpose(s) is served by the poster?

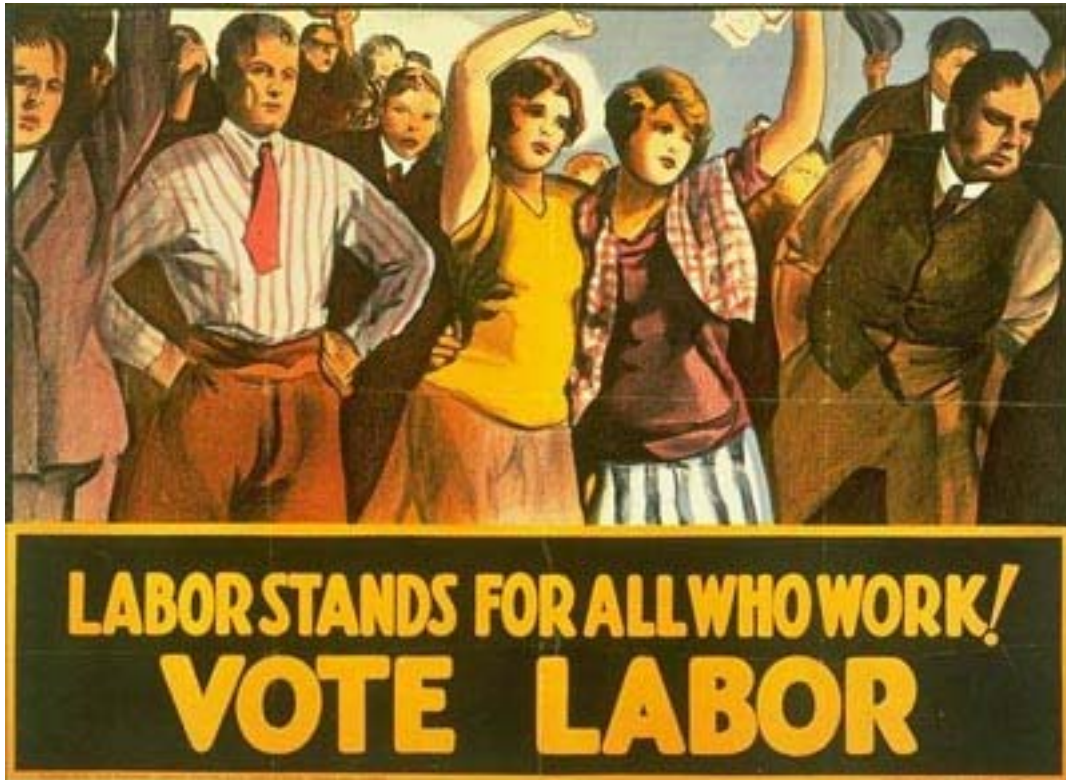
8. The most effective posters use symbols that are unusual, simple, and direct. Is this an effective poster?

Adapted from the design developed by the Education Staff, [National Archives and Records Administration](#), Washington, DC 20408.

Poster: After WWII Union



Poster: Australian Labor



Poster: Free Labor



Poster: Together we are Strong



Poster: Labor Can Do It



Poster: Right to Organize





America's Greatest History Attraction

High School Lesson Plan 32

Brandon Wright, Bradford Academy, Southfield, MI

- Lesson Title:** Agriculture and How it was Changed Due to the Industrial Revolution
- Grade Level:** 9 -12
- Overview:** This lesson will explore how the changes in agrarian technology contributed to the mass scale of crop production that we see in the 21st century.
- Central Question:** How was agricultural changed due to the Industrial Revolution?
- Learning Objective:** The students will be able to understand how the advancement in agrarian technology helped the United States become the top crop producing country in the world.
- Assessment Tools:** The students will give an oral presentation about their findings and conclusions and will be assessed on the information given.
- Key Concepts:** How the Invention of new implements and equipment helped the farm evolve with time.
- Evidence/Sources:** Show the students different types of farming techniques from these sources.
1. <http://www.electricscotland.com/travel/pitlochry/usa/Dscn0227.jpg>
 2. http://pubweb.cc.u-tokai.ac.jp/indus/english/image2/2_2_05_02.gif
 3. http://www.santuariodeloyola.org/imgx/fotoslateral/mapa_25.jpg
 4. <http://www.dumontimplement.com/FarmProducts.htm>
 5. [*Impact of Industrial Revolution on Agriculture*](#)
- Time Frame:** The lesson can be completed in one to two class meetings with a third meeting at the Village.

Instructional Sequence: #1 Students will view the power point on the Impact of the Industrial Revolution on Agriculture. The instructor will then have an in depth discussion on this topic. Upon the conclusion of this lecture students will begin step #2 of the lesson.

#2 Students will be given a pot, soil and seeds in step #1 so that they experience the feeling of working with their hands as early American farmers did in the 1700's.

#3 Students will be given the same materials as above but will be asked to repeat the planting process with a trowel and one more pot and more seeds to plant.

#4 Students will be given a shovel, top soil, two pots and fertilizer.

#5 Upon the conclusion of this lesson, students will go on a field trip to The Henry Ford's Greenfield Village. When they arrive at the Village, the students will go to the Daggett Farm, Susquehanna Plantation and Firestone Farm. The students are to document tools and implements that they believe were technologically beneficial to helping the farmers and that linked the Industrial Revolution to changes in agriculture.

Student Project Ideas: The entire lesson will be done in class and at The Henry Ford. The overall assessment will be done orally by the students upon the completion of the activity,

Anticipated Challenges: None

Curriculum Links: **F2:** Economics and Social Trends in America
USHG ERA#6- The Development of an Industrial, Urban and Global United States (1870-1930)
6.1: Growth of an Industrial Urban America.



America's Greatest History Attraction

High School Lesson Plan 33

David Paschall, Westlake High School, Austin, TX

Lesson Title:	Experimental Cars
Grade Level:	11- US History
Overview:	Students will research and share information relating to past attempts in auto production that are experimental, innovative and eco-friendly. The "Experimental Cars" power point presentation will introduce the idea of experimental and eco-friendly cars and cite resources for further investigation. Follow up assignments will provide student with the opportunity for more in-depth research and several ways to present their investigations.
Central Question:	What can the auto industry do to produce cars that meet the needs of individual transportation while protecting our environment.
Learning Objectives:	Students will: Learn more about the history of auto production in the US. Research alternative materials and fuels. Explore innovative designs.
Assessment Tools:	Assessment will be based on class participation and completion of follow up assignments.
Key Concepts:	Mass production, innovation, links between agriculture and industry.
Evidence/Sources:	The Henry Ford Museum online resources www.thehenryford.org www.cartopia.us Wikipedia- www.wikipedia.org

Time Frame: This project should take an average of 5 class periods to complete.

Instructional Sequence: Power Point Presentation and discussion on the first day.

Visit the library/computer lab for research on the second day.

Write the essay on the third day.

Prepare the brochure in the computer lab on the fourth day.

Produce the collage, timeline or poster on the fifth day.

Student Project Ideas: Assignment # 3 could be individually produced or a small group process.

EXPERIMENTAL AUTOMOBILES

And the influence of Henry Ford

“I WILL BUILD A CAR FOR THE MULTITUDE”

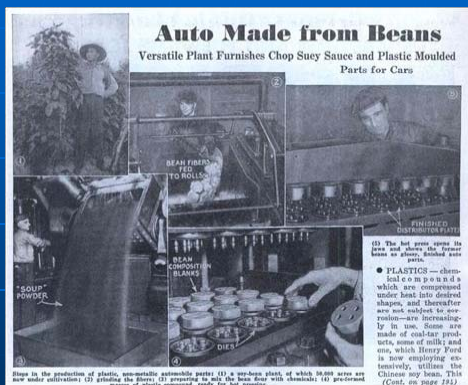


Henry Ford showed off his 1896 Quadricycle and the 10 millionth Model T cars.

http://www.rarecarrelics.com/attachments/Image/10_millionth_model_T_Ford.JPG

- Henry Ford wanted to build a car that the average American could afford. The Ford Motor Company started producing the Model T in 1908. It was the first car to be mass-produced, thus lowering the cost of owning a car.
- Increased car ownership has radically transformed the American landscape and life.
- Ford was a prolific inventor. He received over 161 patents for his inventions and became one of the world's wealthiest men.

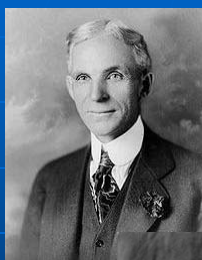
FROM FARM TO FACTORY...



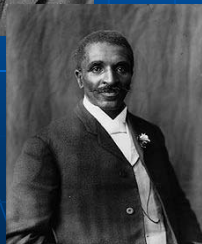
<http://www.treehugger.com/files/2008/09/automobile-farm.php>

- One of Henry Ford's dreams was to firmly establish what he considered to be a natural link between his youth on the family farm in Michigan and the industrial empire that he forged from Highland Park to the River Rouge plants.
- Using crops, like soybeans and corn, he accomplished just that.

EXPERIMENTAL MATERIALS



Henry Ford



George Washington Carver

Henry Ford had an interest in plastics formulated from farm products. His interest in soybeans led to a long-time partnership with George Washington Carver, who was experimenting with peanuts and soybeans.

Ford used soybean-based plastics in many of his car parts such as car horns and paints during the 1930's and in the early 1940's produced a car made almost entirely from this soybean-plastic material.

The car was lighter than other cars its size and the plastic body was much stronger as well.

Ford proved, once again, that he was a man ahead of his times. This car never caught the attention or pocketbook of the American public.

The soybean car...



Henry Ford and Robert Boyer with the 1941 Ford made from soybeans.
http://blog.hemmings.com/wp-content/uploads/2007/01/plasticford_resized.jpg

Did you know that in 1941 Henry Ford was responsible for developing a car made from plastic?

The plastic was made from soybeans and the car ran on ethanol fuel.

The ethanol fuel was made from corn.

The Ford Motor Company sent this "agri-car" on the road, touring state and county fairs all over the Midwest.



Henry Ford showed the strength of his soybean plastic car by hitting with an axe.

<http://www.edmunds.com/media/advice/specialreports/biobased.materials/henry.ford.500.jpg>

- To learn more about Henry Ford's interest in soybeans and other agricultural products, check out this website:
- <http://alpha411.blogspot.com/2008/03/henry-fords-soybean-car.html>

DOES FORD HAVE A BETTER IDEA ABOUT SUSTAINABILITY?

- "Ford Motor Company is the automaker most closely associated with the acceleration of society's acceptance of the private automobile. While most automakers cite a long, yet often tenuous commitment to sustainable practices, Ford is also among the few that can reach down into its roots and come up with numerous examples of initiatives that are strikingly similar to some of today's efforts towards sustainability."
- *26 February 2006*- Jack Rosebro
http://www.greencarcongress.com/2006/02/does_ford_have_.html
-

THE 2003 MODEL U

- As part of its centenary celebration in 2003, Ford Motor Company exhibited the Model U concept SUV, which revisited many of Henry Ford's early concepts. Soy products were used in the production of grease, body panels, and seat foam for the vehicle, which was powered by a modular hybrid powertrain that included a supercharged, hydrogen-fueled 2.3-liter engine.



To learn more about Ford's commitment to sustainable cars, check out this website:
<http://www.ford.com/microsites/sustainability-report-2008-09/default>

INNOVATIVE AND SOMETIMES ODD...



Model T- chapel conversion
http://www.oldwoodies.com/img/rv/21ford_chapel.jpg



Model T conversion to mobile home-
www.oldwoodies.com/gallery-rv.htm



Stanley 20-HP MODEL F
TOURING CAR Steam 1906
flickr.com/photos/10983301@N06/2355457860

OTHER EXPERIMENTAL CARS...



George Barris' Batmobile-
Javelinamx.com



Honda's Puyo is a fuel-cell powered city car with soft surfaces
www.cartopia.us



Mazda's Taiki points to a future rotary-powered sports car —
www.cartopia.us

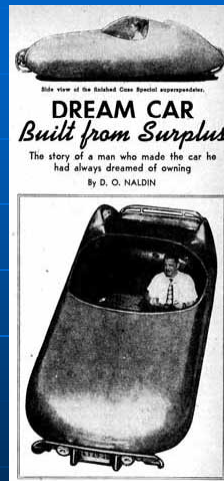


Nissan's Pivo 2 represents a radical solution to big city traffic woes — www.cartopia.us

Perform a Google Image search for "experimental cars" to find some examples of vintage and futuristic cars, especially ones that use alternatives fuels.



Simca of France built the Fulgur, a mock-up projected to utilize atomic power and radar. www.cartopia.us



"Case Special Super Speedster" was a homebuilt dream car fashioned from a WWII Jeep — www.cartopia.us

FOLLOW UP ASSIGNMENTS:

- Now that you have learned a little about Henry Ford's and other alternative type cars, complete the following:

1. Write an essay (200-250 words) describing the positive aspects of developing cars that are produced and fueled from materials that are more eco- friendly.

2. Research and prepare an illustrated tri-fold brochure that describes an experimental car from the past or that is currently available.

3. Prepare either a collage of a dozen vintage experimental cars from the past 100 years

OR

Produce a timeline that outlines the advances made in the car industry over the past 100 years

OR

Draw or paint a poster illustrating your concept of an eco- friendly / experimental car.



America's Greatest History Attraction

High School Lesson Plan 34

Cathryn Goble, Ridge Community High School, Davenport, FL

- Title of Activity:** TOP 5: Inventions, Innovators, and their Impact.
- Grade Level:** 9-12
- Overview:** In this assignment students will research several inventions and innovations including the light bulb, the Model T, the airplane, the telephone, and the typewriter. (Note: These are the 5 I picked. Other inventions and innovations may be substituted.) After they have completed their research they will divide into groups to come to a consensus as to which invention or innovation had the greatest impact (economically and socially) on the US. They will rank them 1 to 5 as a group with 1 having the greatest impact and 5 the least. Then, groups will come together as a class to create a class consensus by listing the inventions from 1 to 5. If you teach multiple classes of US History it will be very interesting to see the difference in results from different classes.
- Essential Question:** How did the telephone, typewriter, light bulb, Model T, and airplane shape the industrial revolution? Which one of the above has had the greatest impact on the US in the time since the industrial revolution?
- Objectives:** Students will know who invented a collection of inventions. They will understand the economic and social impact these inventions had during the industrial revolution and be able to describe their more modern impact as well. Students will be able to intelligently debate the significance of each invention.
- Assessment:** During this activity there are several opportunities for assessment. First, the research on inventors and inventions may be done as homework and turned in for a grade. Secondly, students can be observed in their groups as to how well they are participating and interacting with their peers. Students may also be observed in the large classroom discussion and may be assessed by their ability to argue and defend their position. (Note: Some may find it better to measure a student's participation large group

debate vs. their ability to defend their argument.) Finally at the conclusion of this activity, students should be able to answer the following FRQ: Discuss 3 developments of the American Industrial Revolution and how they shaped 20th century business and society.

Key Concepts: Student understands the causes of the Industrial Revolution and its economic, political, and social effects. Students understand how culture and technology can link or divide regions. Students understand how finances can motivate consumers, producers, and workers.

Key Vocabulary: Thomas Edison, Henry Ford, the Wright Brothers, Christopher Sholes, Alexander Graham Bell, Andrew Carnegie, John Rockefeller, Cornelius Vanderbilt, Robber Barons, Monopoly, Holding Company, Trust, Assembly Line

Time Frame: This activity is part of a larger unit on The Industrial Revolution. The introduction of this activity should take 20-40 minutes. The group discussion and large group debate should take approximately 100 minutes. Therefore, this activity should take 2-3 class periods depending on the setup of your school schedule. In the instructional sequence below I have included it as part of a greater unit.

Instructional Sequence: (Assumes 50 minute class period):
Day 1: Introduction of Industrial Revolution unit with activating strategy like A to Z chart or KWL chart. Begin notes if time permits.
Day 2-4: Notes on Industrial Revolution via Power Point.
Day 5: Introduction of Top 5 Activity via Power Point. (See attached)
HW: Research the following inventions and their economic and social impact: telephone, assembly line Model T, airplane, light bulb, and typewriter.
Day 6: Small group discussion and creation of Top 5 list.
Day 7: Large group discussion and creation of class Top 5 list.
Final Assessment: FRQ
Discuss 3 developments of the American Industrial Revolution and how they shaped 20th century business and society.

Student Project Ideas: In this activity students will be writing paragraphs about five inventors and their creations as a homework assignment. They will be generating a group list, and writing an essay as a final assessment.

Differentiated Instruction: Other project ideas would allow students to create a power point, moviemaker, or bulletin board on a particular inventor/invention. You could also have students “make up” their own invention and create business models and advertisements for their new product. These ideas allow for differentiated instruction and/or can make the assignment more economics driven.

Anticipated Challenges: It will be important to give students examples so that they clearly understand what constitutes social and economic impact. It will be important to convey to students that their participation in small and large group counts as part of their assessment and that they need to participate.

The Industrial Revolution

The TOP 5 Activity

Your Job

- Your job tonight is to research the inventions that will follow and answer the following questions.
- Who invented it?
- What economic and social effects did it have on the US?
- Did it affect jobs? The workplace? Issues of gender? Leisure? Home life?
- Think about these things as you explore...

The Telephone!



The Typewriter



The Light Bulb



Assembly Line Model T





Workshop Staff

Paula Gangopadhyay, Director of Education, NEH Project Director



Paula Gangopadhyay is the Director of Education at The Henry Ford. She is responsible for the leadership, strategic direction, design and development of education. She believes that classroom experiences for all types of learners can be enhanced by the holistic, cross-disciplinary and hands-on educational tools offered by museums. She has a master's degree in history, certification in archival, museum and editing studies and a fellowship in education policy. During her 14-year career, Gangopadhyay has served as curator of education, public programs and visitor services at the Public Museum of Grand Rapids, executive director of the Great Lakes Center for Education, Research and Practice and executive director of the Commission for Lansing Schools Success (CLASS). She was also selected as a finalist for the 2000 Governor's Service award. In addition, she serves on several regional, state and national education boards and panels.

Dorothy Ebersole, Curator of Education



Dorothy is Curator of Education at The Henry Ford and has been involved in developing a wide array of partnerships, programs and materials for teachers and students for the past 16 years at The Henry Ford. Dorothy ensures that all of the educational programs at The Henry Ford are aligned with state standards and grade level expectations. Dorothy received her B.A. in history from Oklahoma State University and completed the Michigan Education Policy Fellowship Program at Michigan State University. Her career in museum education has included employment at the Public Museum of Grand Rapids, The Strong Museum in Rochester, New York, and the Geneva Historical Society in Geneva, New York. She is on the board of directors of the Michigan Council for History Education.



Ryan Spencer, Education Coordinator- Special Projects

Ryan is the Education Coordinator, Special Projects at The Henry Ford. He received his Master of Letters in Museum Studies from the University of St. Andrews, Scotland and his B.A. in History at Hillsdale College, Michigan. Ryan is a Michigan Certified Teacher in History and English and has taught high school courses in two charter schools. Before joining the Education Team, Ryan worked as a presenter in Greenfield Village in the Working Farms and Porches and Parlors Districts. Ryan has additional museum experience through The National Museum of Scotland, Edinburgh; St. Andrews Museum, St. Andrews, Scotland; and the Will Carleton Poor House, Hillsdale, Michigan.

The Henry Ford Curators

Bob Casey, Curator of Transportation



Bob Casey is an automotive historian and author of a forthcoming centennial history of the Model T Ford. Bob Casey has combined his love of engineering and of history. He is a graduate mechanical engineer and worked for Bethlehem Steel. He also holds degrees in American history and the history of technology. He has been a historian and curator for the Institute of Electrical and Electronics Engineers, Sloss Furnaces National Historic Landmark, and the Detroit Historical Museum. Since 1991 he has been John and Horace Dodge Curator of Transportation at The Henry Ford. He is a judge at the Meadow Brook and Glenmoor Gathering concourses, and his book *The Model T: A Centennial History* was published by Johns Hopkins University Press in July, 2008.

Marc Greuther, Curator of Industry and Design



Marc has a B.A from the Courtauld Institute of Art at the University of London, and over twenty years of experience with industrial technology at The Henry Ford. His seven years as a member of the institution's Historic Operating Machinery unit involved him in the operation and troubleshooting of a wide range of artifacts, from 19th century machine tools and steam engines to late 20th century robots and production equipment. His writings for The Society for the History of Technology's journal *Technology and Culture* usually spring from or explore areas where art history and the history of technology overlap.

Guest Scholars

Dr. Paul Israel, Rutgers University



Paul is director and general editor of the Thomas A. Edison Papers at Rutgers University. The Edison Papers provides leadership in publishing and developing the documentary legacy of America's most prolific inventor and innovator. To date the project has produced six volumes of *The Papers of Thomas A. Edison* as well as an online edition with over 200,000 document images (<http://edison.rutgers.edu>). In 2005 the Edison Papers received a special Eugene S. Ferguson Prize from the Society for the History of Technology (SHOT) as an outstanding and original reference works that will support future scholarship in the history of technology. The Edison Papers are also working to advance the Edisonian legacy through interdisciplinary initiatives in young and higher education. Dr. Israel is the author of *Edison: A Life of Invention* (Wiley, 1998), which was awarded the Dexter Prize by the Society for the History of Technology. He is also the author of *From Machine Shop to Industrial Laboratory: Telegraphy and the Changing Context of American Invention, 1830-1920* (Johns Hopkins University Press, 1992) and coauthor of *Edison's Electric Light: Biography of an Invention* (Rutgers University Press, 1986).

Prof. R. Douglas Hurt, Purdue University



Doug received his Ph.D. from Kansas State University and is Head of the History Department at Purdue University. Dr. Hurt is a specialist in American Agricultural History. He is a past president of the Agricultural History Society and has served as the editor of the international journal for agricultural history entitled *Agricultural History*. Dr. Hurt is the author of eighteen books, the most recent being *The Great Plains during World War II*. He is currently writing a book entitled *The Big Empty: The Great Plains during the Twentieth Century* and is conducting research on agriculture during the Civil War.

Nancy Gabin, Purdue University



Nancy was born in New York and grew up in Massachusetts but has lived in the Midwest since 1977. She received a B.A. from Wellesley College and a Ph.D. from the University of Michigan. A faculty member in the Department of History at Purdue University, she teaches courses in American women's history and labor history as well as the United States history survey and a course on the 1960s. Cornell University Press published *Feminism in the Labor Movement: Women and the United Auto Workers, 1935-1975* in 1990. Articles on women, work, and the labor movement have been published in *Labor History*, *Feminist Studies*, *Labor's Heritage*, and the *Indiana Magazine of History* as well as in several anthologies and encyclopedias including *Work Engendered: Toward a New History of American Labor* (ed. Ava Baron), *Midwestern Women: Work, Community, and Leadership at the*

Crossroads (eds. Lucy Eldersveld Murphy and Wendy Hamand Venet), *The State of Indiana History 2000* (ed. Robert Taylor), and *The American Midwest* (ed. Richard Sisson, *et al.*). She is completing a one-volume history of women in Indiana and is developing a study of women workers and the political economy of gender in the twentieth-century Midwest.

Professor Martin Hershock, University of Michigan-Dearborn



Marty is an Associate Professor of History and Chair of the Department of Social Sciences at the University of Michigan-Dearborn where he teaches courses on the 19th century United States. He is the author of *The Paradox of Progress* and co-editor of *The Political Lincoln* and *The History of Michigan Law*. Currently, he is completing work on a new book, *Oh Lord Make Haste to Help Me: The Life and Times of Timothy M. Joy, Debtor, 1789-1813*, which will be published by Harvard University Press in 2010.