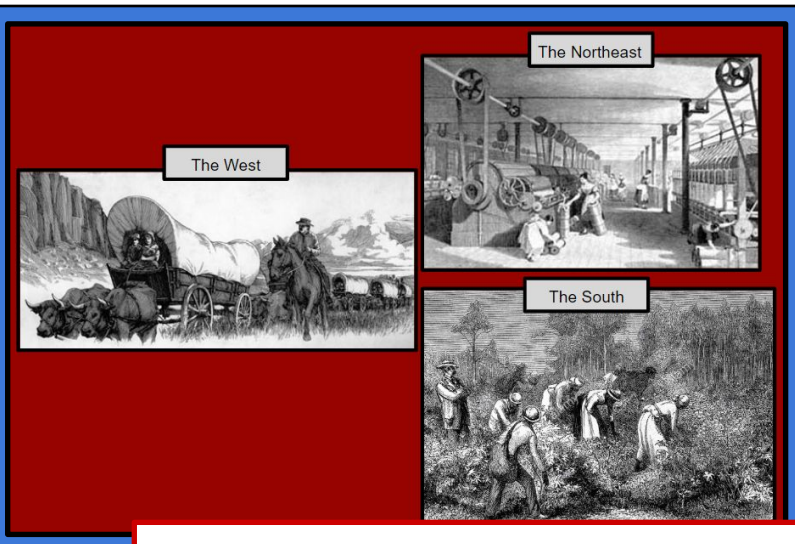


Comparing the Northeast, South and West

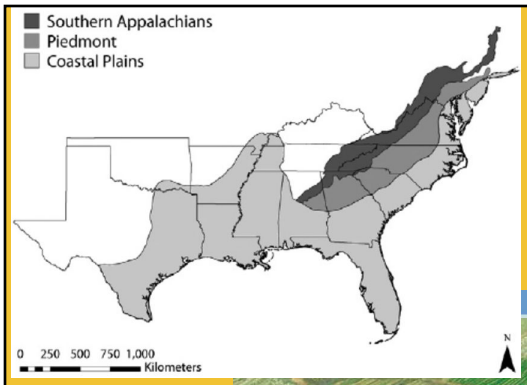
New England

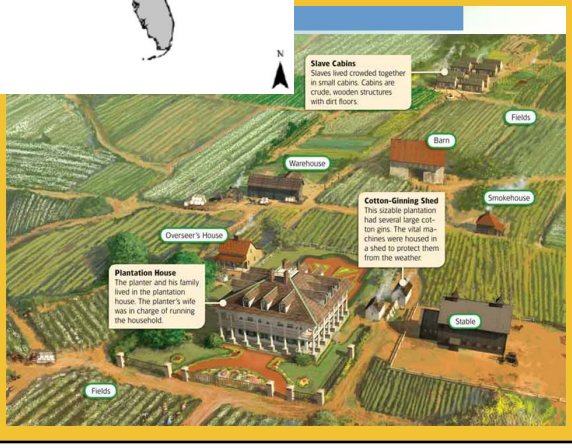
- Rocky soil
- Narrow coastal plains
- Long winter, Short growing season
- Natural harbors

- Lumbering
- Shipbuilding
- Fishing and Whaling
- Trade

- Subsistence Farming

- Towns

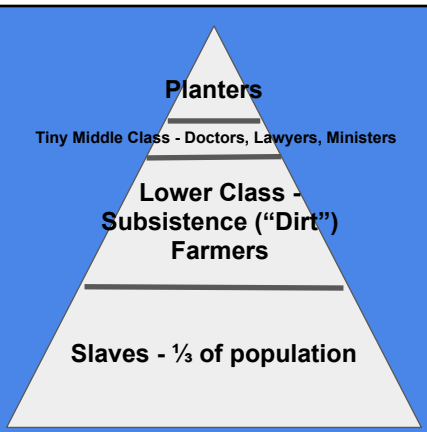




South

- Wide coastal plains
- Year-round growing season
- Coastal Plains - Plantation farming - cotton, tobacco, indigo
- Poor land, mountains -
- Subsistence farming
- No towns or cities - People live on plantations or subsistence farms

North
Population Density - High due to Cities, Towns



South
Population Density - Low due to large plantations, very rural, few cities

West
Population Density - Low
Still being settled

Industry develops in Northeast

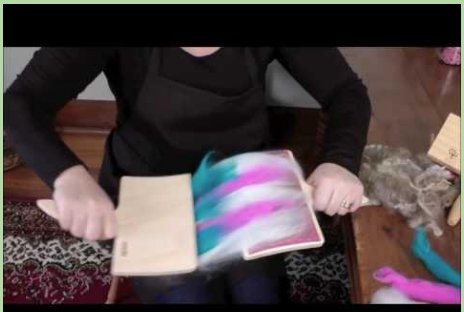
First Factories produce Textiles - Cloth

1st Step - Carding

- After wool or cotton cleaned
- Fibers need to be
  - Untangled
  - Straightened
  - Made parallel
- Produced a fleecy roll of fibers ready to spin into thread
- Old method - Put on one flat, wire-bristled brush and pulled back and forth between that brush and another

Industry develops in Northeast

First Factories produce Textiles - Cloth

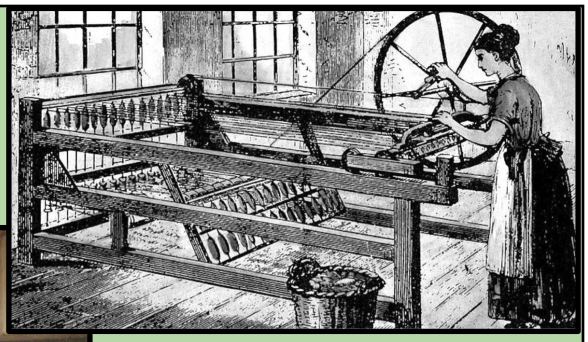


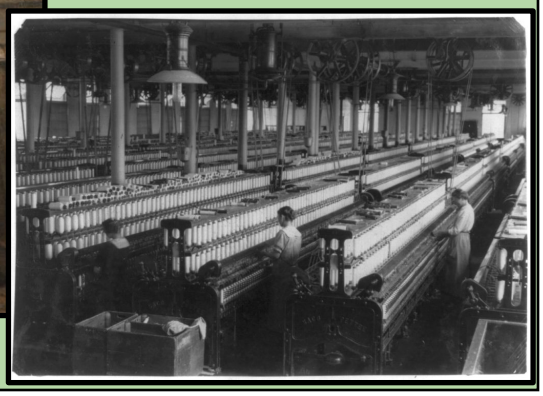
1st Step - Carding

- After wool or cotton cleaned
- Fibers need to be
  - Untangled
  - Straightened
  - Made parallel
- Produced a fleecy roll of fibers ready to spin into thread
- Old method - Put on one flat, wire-bristled brush and pulled back and forth between that brush and another

Industry develops in Northeast

Produces Textiles - Cloth





2nd Step - Spinning

- Strands of fiber were pulled from the fleecy roll
- The fiber was twisted between the fingers to start the thread
- The thread was then secured into a notch on the bobbin
- A pedal is worked with the foot that spun the wheel and the bobbin
- The woman drew fibers out of the roll, twisting them as they joined with the already formed thread
- The thread wrapped around the spinning bobbin
- When one bobbin was full it was removed and replaced by an empty bobbin

Industry develops in Northeast

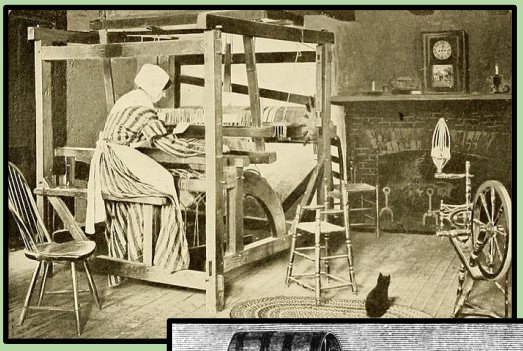
Produces Textiles - Cloth

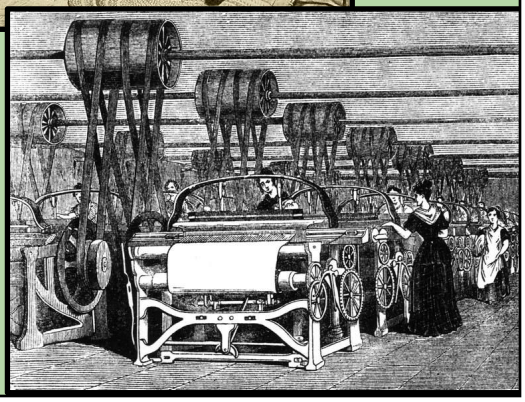
2nd Step - Spinning

- Strands of fiber were pulled from the fleecy roll
- The fiber was twisted between the fingers to start the thread
- The thread was then secured into a notch on the bobbin
- A pedal is worked with the foot that spun the wheel and the bobbin
- The woman drew fibers out of the roll, twisting them as they joined with the already formed thread
- The thread wrapped around the spinning bobbin
- When one bobbin was full it was removed and replaced by an empty bobbin

Industry develops in Northeast

Produces - Textiles - Cloth





Step 3 - Weaving thread into cloth

- Threads are run vertically on a loom - called warp threads
- Alternating warp threads are picked up by stepping on a pedal
- A horizontal thread - called the weft - attached to a shuttle is propelled between the warp threads
- A bar taps the threads together
- A different pedal is pushed, picking up different warp threads and the shuttle with the weft thread is propelled back again
- The process is repeated

Industry develops in Northeast

Produces - Textiles - Cloth

Step 3 - Weaving thread into cloth

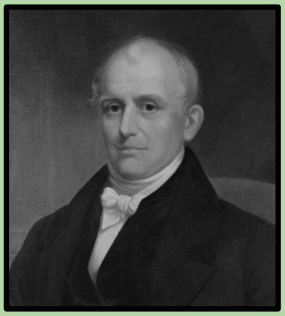
- Threads are run vertically on a loom - called warp threads
- Alternating warp threads are picked up by stepping on a pedal
- A horizontal thread - called the weft - attached to a shuttle is propelled between the warp threads
- A bar taps the threads together
- A different pedal is pushed, picking up different warp threads and the shuttle with the weft thread is propelled back again
- The process is repeated

Industry develops in Northeast

Produces Textiles - Cloth

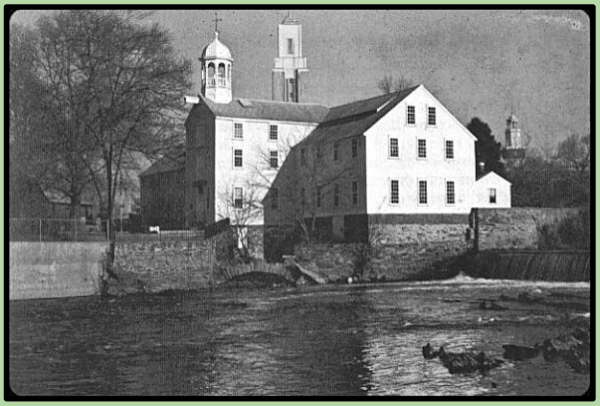
Famous Men - Sam Slater

- Escaped Britain with knowledge of how to build carding machine
- Went to America as Hamilton's financial plan begins



- Found a wealthy New England trader willing to invest - Moses Brown

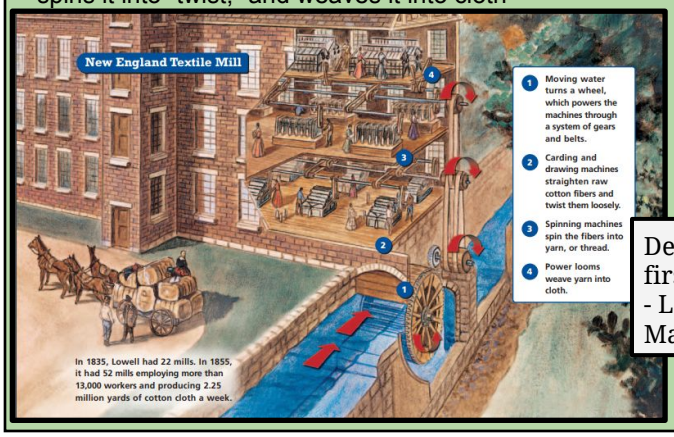
- 1793 - Built the first water-powered factory in America to spin wool

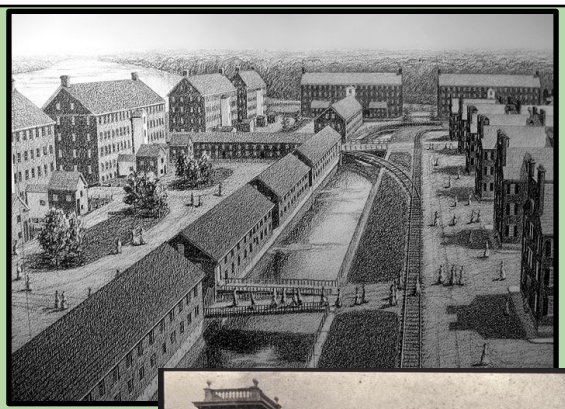


Industry develops in Northeast - Cloth

Famous Men - Francis Cabot Lowell

Built first full water-powered factory that cards cotton, spins it into "twist," and weaves it into cloth

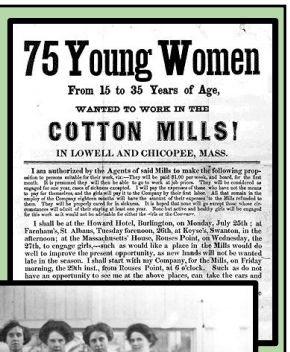




Developed into first factory town - Lowell, Massachusetts

Industry develops in Northeast

Labor - Girls from subsistence farm families



Industry develops in Northeast

Labor - Girls from subsistence farm families

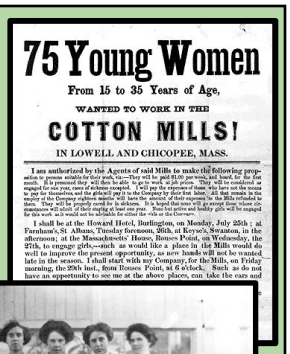
Subsistence farm families needed a source of cash

- Mothers had earned cash in home carding, spinning, and weaving
- Now done in factories
- Teenage daughter can leave home and go to factory

Factory owners work to attract girls

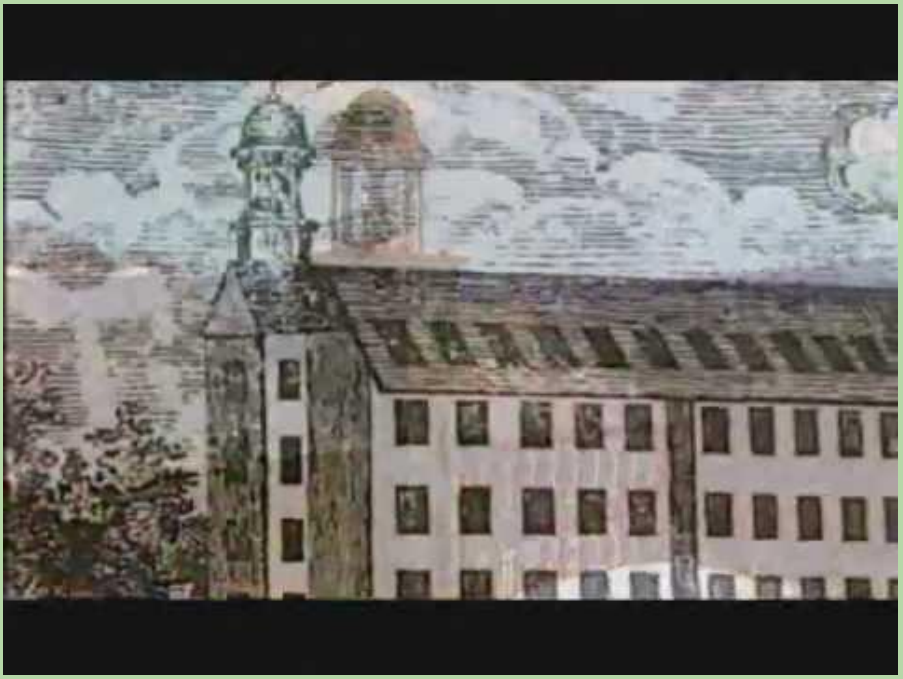
- Build boarding houses - sleep and eat here
- Provide strict supervision by dorm "mothers"
- after work
- attend lecture
- go to library
- pianos available
- Published magazine girls created - *The Lowell Offering*
- a library

Grew into whole town - Lowell, Massachusetts



Video - Play from 4:00 to about 14:00

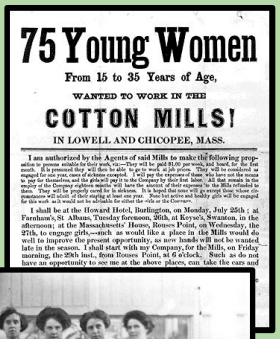
Industrial Revolution - Textile Industry



Industry develops in Northeast

Factory Conditions

- poor light - only natural light from windows
  - cause eye strain
- little fresh air - little pieces of fiber fly around
  - can damage lungs
- very noisy - due to all the wooden parts banging together
  - lost hearing
- machines could harm - can't stop waterwheel, so parts didn't stop moving if clothing or hair got stuck
  - crush hands, skull, leg
- owners do not help the injured -
  - just no longer employ them because they can no longer work
- hours very long - 12 to 14 hours per day, 6 days per week



Industry develops in Northeast

Development of a New Method of Manufacturing

Old Method of Making Guns

- **skilled** workers
- building **whole product**

Gunsmiths learned their art through long apprenticeships.

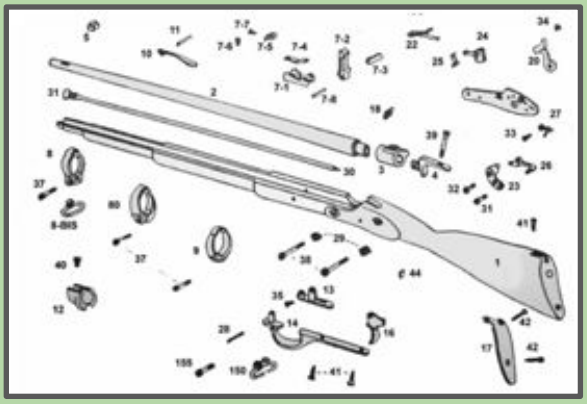
They made guns by hand in small shops.

Each gun was made to order and was unique.

Repairs also needed to be done by gunsmith, who would hand-make a new part.

Industry develops in Northeast

New Method of Manufacturing - Eli Whitney's Interchangeable Parts



New Method of Making Guns

- **100s of copies of each piece are made**
- each piece is **identical**
- **unskilled** workers then quickly assemble parts like a puzzle

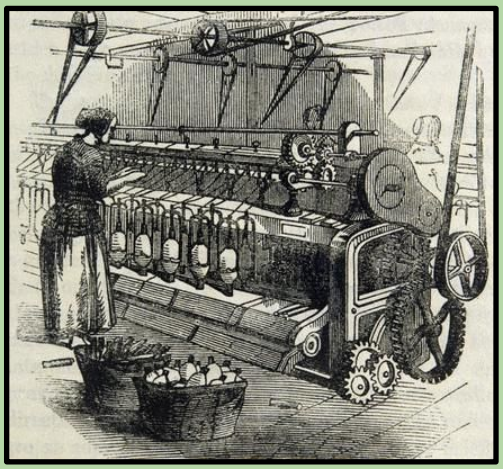
Video - Milling Machine Grinding a Rifle Stock out of a Piece of Wood

This video shows the barrel of a gun being made from a template, a metal pattern, which was the method developed by Eli Whitney to make identical, interchangeable parts. This machine is the Blanchard Lathe invented by Thomas Blanchard.

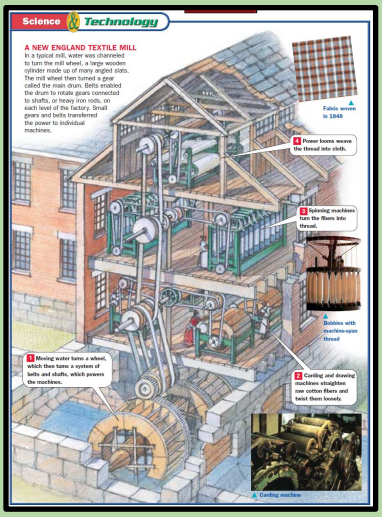
Click here to go to another video of the Blanchard lathe.

Industrial Revolution - What changes do you see?

Click on Black Box and move it to reveal answer.



Click on Black Box and move it to reveal answer.



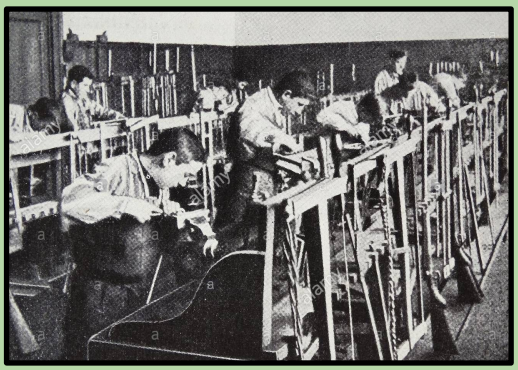
[redacted]

Industrial Revolution - What changes do you see?

Industrial Revolution - What changes do you see?

Click on Black Box and move it to reveal answer.

[redacted]



[redacted]

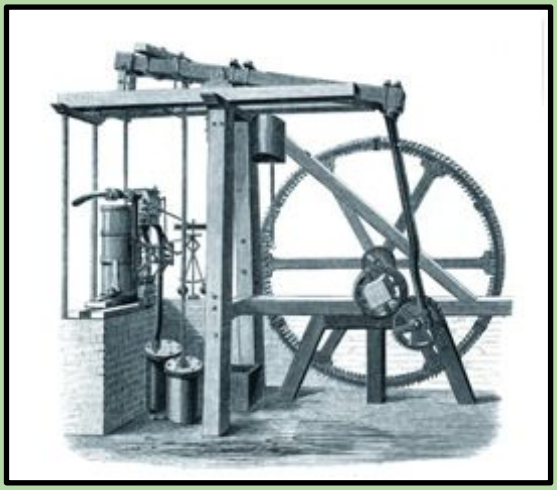
The Industrial Revolution - What Changed?

Before → After

Before	After
• At home • On your schedule • Made by hand • Power source - human • Skill needed • Not dangerous	• In factory • On "Factory Time" • Made by the machine • Power source - water, steam • Less skill needed • Dangerous to health

Industry develops in Northeast

The Steam Engine - no longer need river to power machines

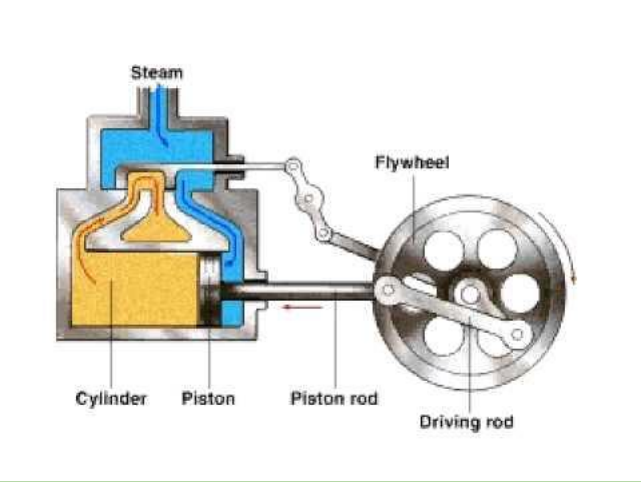


- in 1760s in Britain and continuously improved

- Water boiled in a cylinder
- Steam trapped in cylinder creates pressure
- Pressure released through a valve drives a piston rod
- Rod turns wheel like legs pedal a bike
- turning wheel connected to machines by gears, axles, and belts

Industry develops in Northeast

The Steam Engine - no longer need river to power machines



Industry develops in Northeast

The Steam Engine - no longer need river to power machines

Video that explains how the steam engine before Watt's worked and his four improvements - start at 2:10, then 4:45

Industry develops in Northeast

The Steam Engine - no longer need river to power machines

Video that explains how the steam engine before Watt's worked and his four improvements - start at 2:10, then 4:45

Industry develops in Northeast

The Steam Engine - no longer need river to power machines

Watt's four Improvements explained

- Separate condenser
  - See above video
- Parallel motion steam engine
  - https://www.youtube.com/watch?v=7LpHf0ssIb8
- Centrifugal governor
  - https://www.youtube.com/watch?v=OG1AiaNTT6s
- Sun and planet gear on steam engine
  - https://www.youtube.com/watch?v=LVc_5kG4Lb8
- Good Overview
  - https://www.youtube.com/watch?v=QltRwiu4U2Q

Development of the North - Immigration

Irish Immigration

Push Factor - The Irish Potato Famine

- In Ireland - Grew wheat
  - But had to give to English nobleman who owned land as rent
- Instead ate potatoes as main part of diet
  - grew with little care while worked on wheat
- Mid-1840s - disease infected the potato crop
  - Caused famine (starvation)
- Starving - many unable to work, didn't produce enough to pay rent
  - Kicked off their land by English landlords
- Starving, homeless, unable to keep clean and dry - get infectious diseases, such as cholera
  - Nearly ⅓ of the population of Ireland died
- Another ⅓ forced to emigrate - most to North America
  - Irish ½ of immigrants to the U.S. in 1840s
- All went to North

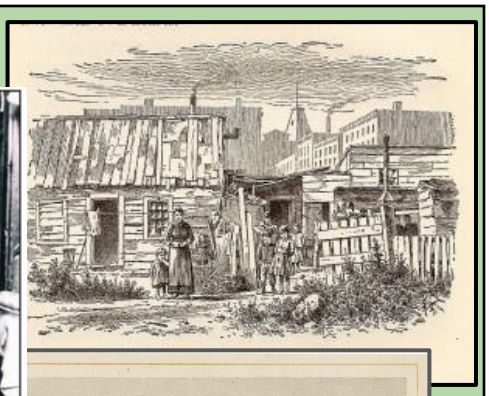
Development of the North - Immigration

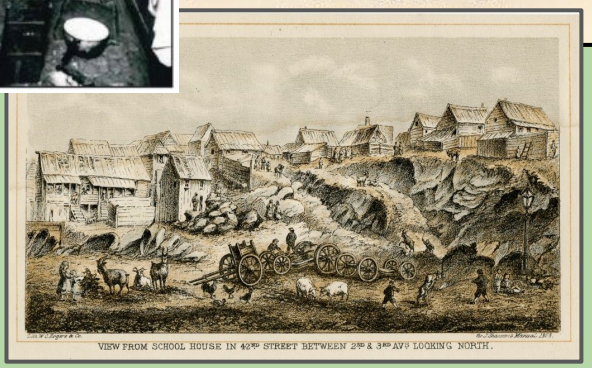
Irish Immigration

- 1820s - 54,000
- 1840s - 781,000
- 1850s - 914,000
- 1845 - 1860 - 1.7 million
- 1860 - 1910 - 2.3 million

Development of the North - Immigration

Irish Immigration



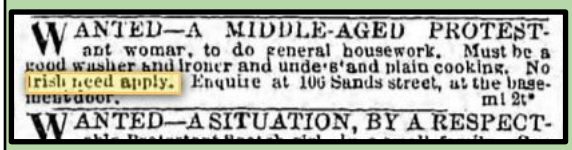


- British landowners wanted Irish to stay peasants
  - like the American slaves
- So Irish arrived with
  - No skills
  - No education
  - No money
  - Few clothes
- Stay in coastal cities - no $ for travel, land
  - New York, Boston
- Conditions for Irish in U.S. cities very bad - live in Shanty Towns
  - Shacks made of discarded materials
  - No running water
  - No sewers
  - No streets - just paths that turned into ditches after heavy rain

Development of the North - Immigration

Irish Immigration

- Jobs were hard to find
  - "No Irish Need Apply" signs common
- Irish women - work as servants and washwomen
  - called "Biddies," short for Bridget.
- Irish men - unskilled jobs
  - construction, digging the canals, building railroads
  - called “Paddies,” short for Patrick



WANTED—A MIDDLE-AGED PROTEST-
ant woman, to do general housework. Must be a
good washer and ironer and understand plain cooking. No
Irish need apply. Enquire at 106 Sands street, at the base-
ment door. m1 2t*
WANTED—A SITUATION, BY A RESPECT-

HELP WANTED.

WANTED—A GERMAN PROTESTANT
or colored girl for general housework in a small fam-
ily; good reference required. No Irish need apply. Call at
121 Portland avenue, near Myrtle.

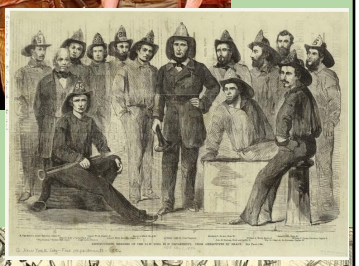
WANTED—A PROTESTANT GIRL,
about 16 years of age, to assist in the care of chil-
dren. Apply for two days at 16 Green avenue.

Development of the North - Immigration

Irish Immigration

Slowly gain power

- Very small police force
  - Wealthy hired protection
- Form gangs, to protect self
  - First known gang - The Forty Thieves in Five Points area of NYC
- Had majority of votes, so get political control, electing
  - Mayors
  - City councilmen
  - Police chiefs
- Then get jobs as
  - Policemen
  - Firemen



Clip the film - *The Gangs of New York*
Fight between Nativists and Irish gangs

Documentary - “Uncovering the Real Gangs of New York” Irish Gangs in 1850s
35 minutes

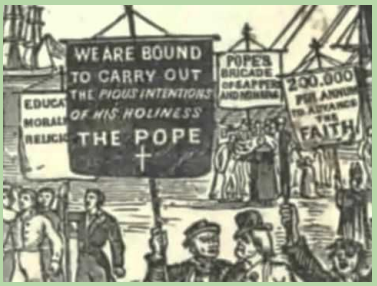
- https://www.youtube.com/watch?v=eU8UcYY0N8w#t=950.242816

Development of the North - Immigration

Discrimination Against Irish

"The Most Recently Discovered Wild Beast"
Depicted as Brutish Beasts

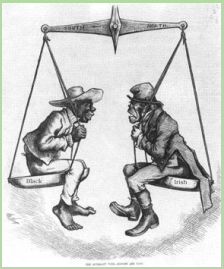
"No More Irish Paupers Wanted in the U.S."



Shown as controlled by Pope

"The Usual Way of Doing Things"

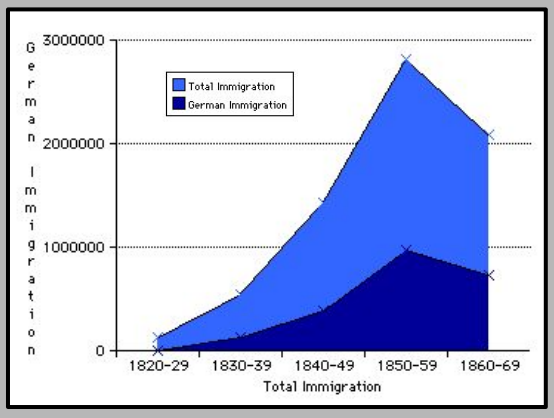
Depicted as drunks



Irish and African American slaves depicted as equally unintelligent.

Characteristics of the North - Immigration

German Immigration
as part of Total Immigration
1820-1860



German Immigration

- Between 1830 and 1910, over 90% of all German emigrants came to the U.S.
- Most came for economic opportunity - to buy farms and open businesses
  - A minority came due to a failed rebellion for democracy, religious conflict, or to escape forced service in the german army
- Wrote letters home describing success
  - Letters circulated in newspapers and books
- Worked like advertising - drawing more
  - 1832 - 10,000
  - 1854 - 200,000

Characteristics of the North - Immigration

German Immigration

Over half move to Ohio Valley & Great Lakes

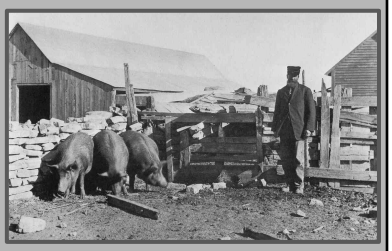
- 1/2 to cities, 1/2 to farms

Farming

- Land affordable
- Soil, climate, crops - similar to Germany

Skilled trades

- Bakers, brewers, butchers, tailors, brick workers, carpenters



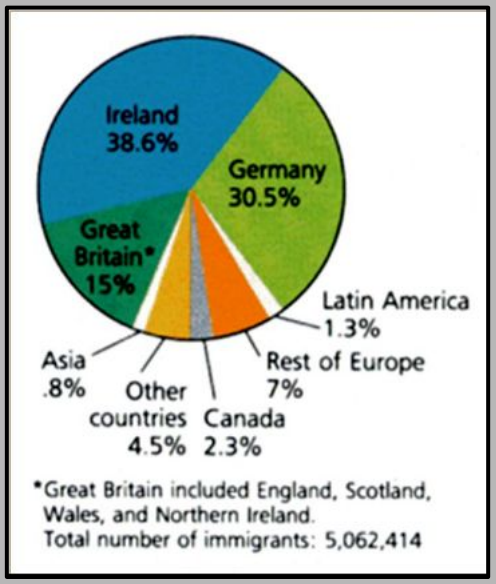
Industrialists (and factory workers)

- Bausch and Lomb - optical glass
- Steinway - pianos
- Rockefeller - oil
- Studebaker, Chrysler - cars
- Heinz - meats
- Budweiser, Busch, Stroh - Brewing

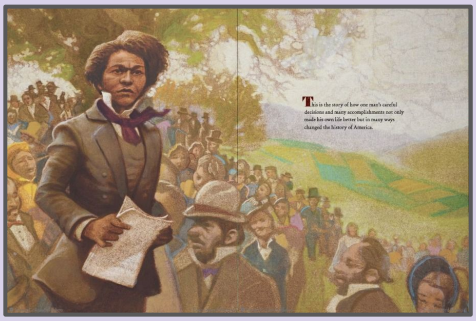
German immigrants- **all levels of society**

Characteristics of the North - Immigration

Total Immigration 1820-1860



Free Blacks in North



Faced discrimination
- Denied right to vote
- Denied work in factories or skilled trades
- Employers preferred white immigrants

Faced segregation
- Separate schools
- Separate churches

Portrayed as inferior by white newspapers
- so started own newspapers

Some were able to get an education
- a very few were accepted at some colleges
  - Harvard
  - Oberlin

Nativism

Characteristics of the North

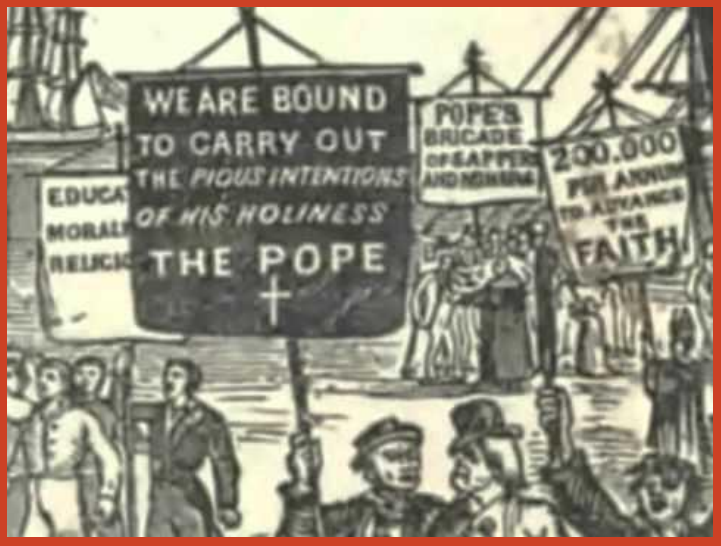
- Fear of growing foreign population
- Nativists - people who think America needs to be preserved for **white, American-born, Protestants**
- Oppose Irish immigration most –
  - Irish - **Roman Catholic**
  - Nativists believed pope controlled Irish votes

A Know Nothing Party Flag

- NY Nativists form secret group
- When asked about it - members say “I know nothing”
  - Become political party – **Know Nothing Party**

Characteristics of the North

Nativism - Video



Characteristics of the North

Nativism Political Cartoons

To imterpret

[redacted]

[redacted]

[redacted]

ELECTION FO
POLLS
WHISKEY
LAGER
BIER
LAGER BIER
BALLOT
BOX

Comparing the Northeast, South and West:

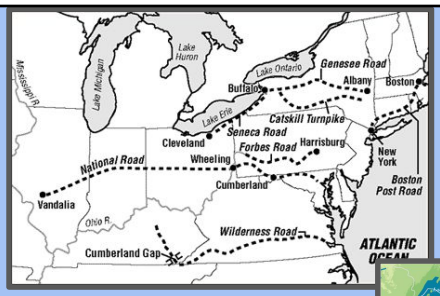
Bridging the Northeast and The West

Bridging the Northeast and the West

Moving Goods, People, and Ideas

Linking the Cities of the Northeast
to the Farms of the Midwest

- Bring crops to cities
- Take manufactured goods to farms

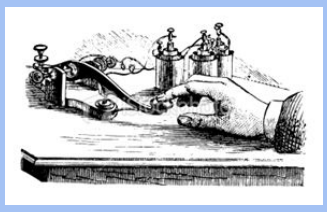


Step 1 - The National Road

Step 2 - Canals

Step 3 - Steamboats

Step 4 - Steam Locomotives



Telegraph - allows businesses to communicate

First Build a Road from Northeast to West!

The National Road

- Route east for farm goods.
- Route west for manufactured goods and settlers.
- First Interstate Highway

Video
https://www.youtube.com/watch?v=qYtUYzK40HQ

Canal System

Linking the Cities of the Northeast to the Farms of the Midwest

- Bring crops to cities
- Take manufactured goods to farms

Getting farm produce to the cities of the East -

Step 1-
Travel north from the Ohio River to Lake Erie

Step 2 -
Travel east on the Erie Canal to Lake Erie

Step 3 -
Travel south down the Hudson River to NYC then out to other cities via the Atlantic

Bridging the Northeast and the West

Canals

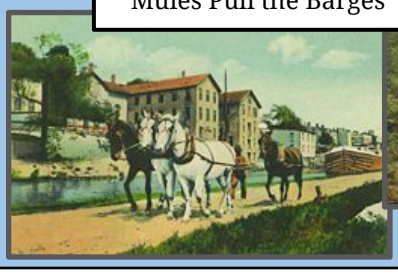
Made Transportation WAYYY Cheaper!

Costs and Time of Shipping between New York and Buffalo

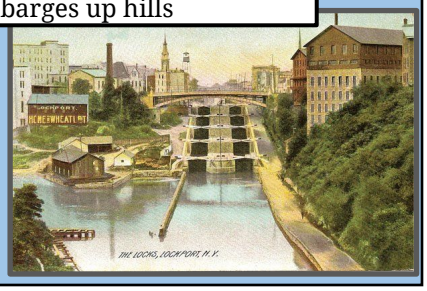
	Dirt Road	Canal
Method	Wagon	Boat
Amount of time	21 days	6 days
Cost	$120/ton	$6/ton

Building the Canals

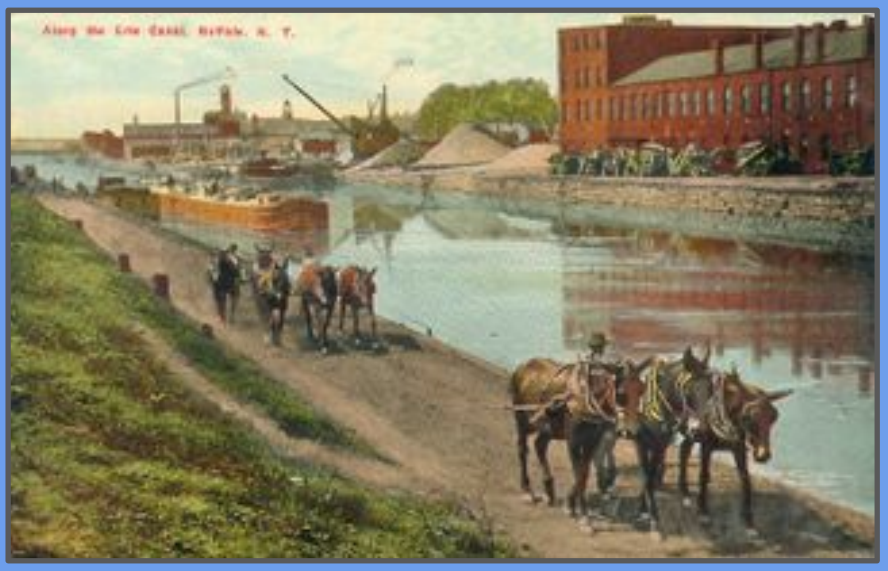
Mules Pull the Barges



Locks to raise and lower barges up hills



LOCKPORT
HOME of WHEATLET
THE LOCKS, LOCKPORT, N.Y.


Along the Erie Canal, Buffalo, N. Y.

Data - Costs and Time of Shipping between New York and Buffalo

	Road	Canal
Method	Wagon	Boat
Amount of time	21 days	6 days
Cost	$120/ton	$6/ton

Bridging the Northeast and the West

Steamboats

As stronger metal is developed,
allowing greater pressure in the boiler and thus more power,
stream engines are able to propel boats.

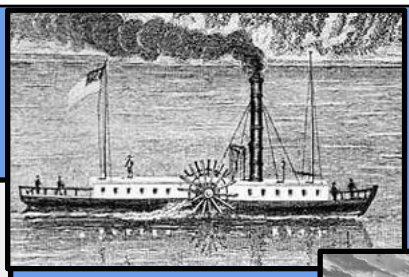
Step 1- Up River on the Hudson River

Step 2 - Downriver on the Ohio River

Step 3 - Downriver on the Mississippi River

Step 4 - Upriver on the Ohio

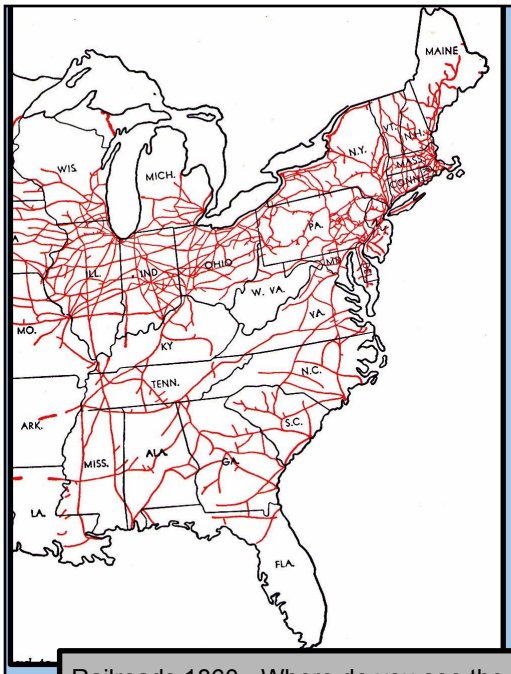
Step 5 - Upriver on the Mississippi



First on the Hudson River - The Clermont

First on the Ohio River - The New Orleans

Built trade up and downstream on the Mississippi - The Natchez



Railroads 1860 - Where do you see the most railroads?

Bridging the Northeast and the West

Steam Trains

Video - How a Steam Engine Works

https://www.youtube.com/watch?v=wZSoMxTb1ZM

https://www.youtube.com/watch?v=g8LrAsL4oH0

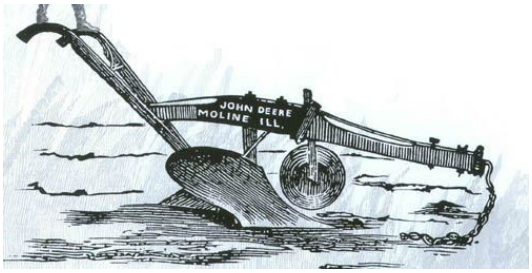
Nobody in a City is Farming!
Industrialization can only occur if Farming productivity improves!

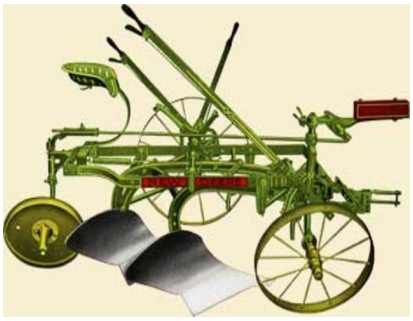
Four Important Inventions
that improve Productivity in Agriculture

- Plow
- Mechanical Reaper
- Mechanical Thresher
- Combine

John Deere's Plow

- Bites into the soil
- Soil does not stick to the blade
- Tends to a straight route
- Curls soil off to the side
- Lever can alter depth of furrow



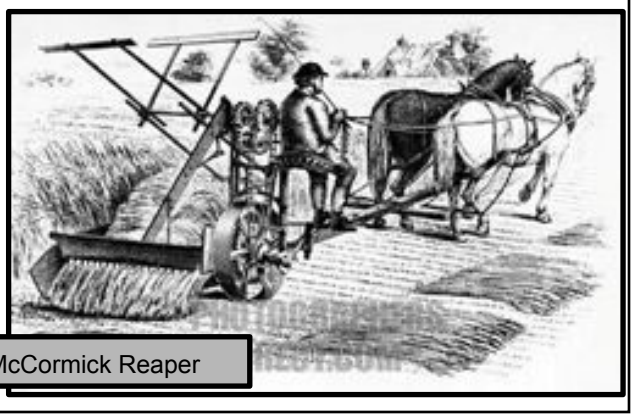


Video of Man plowing on a John Deere sulky plow
https://www.youtube.com/watch?v=6qYDWZabAD4

Mechanical Reapers

If a farmer can plow more land using the new plows, he has to be able to harvest it more efficiently, as it must be brought in when it ripens before it molds or is otherwise damaged.

Men cutting down men by hand with a scythe



The McCormick Reaper

Threshing - removing the grain from the stalk

Grain on the stalk
Grain off the stalk

Old Method - hitting it with a flail

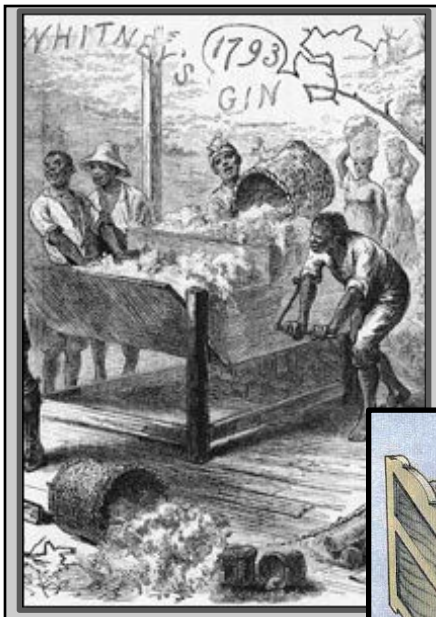
A Mechanical Thresher

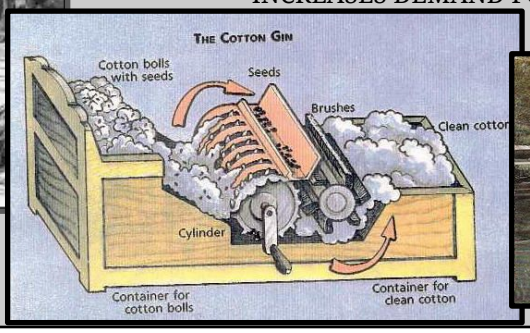
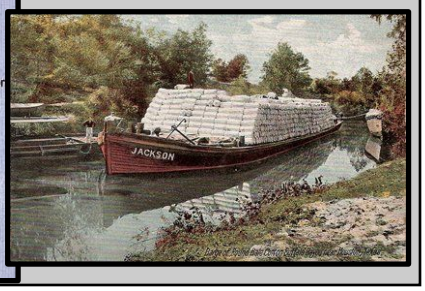
A Combine -
Machine that both cuts the grain down and threshes it

Video Clip of Working Combine
https://www.youtube.com/watch?v=Rwgne-T-aN0

Comparing the Northeast, South and West:

Characteristics of the South



Development of the South - Cotton Plantations - The Cotton Gin

- Invented by - Eli Whitney
- Cleans the seeds out of cotton
  - kind of cotton that grows in America very difficult to clean
- Before Cotton Gin – Cotton not profitable
  - seeds had to be picked out of cotton fibers by hand
  - laborer could only clean 1 lb. of cotton/day - not profitable
- Gin makes cotton a profit-producing crop
  - Worker could clean 50 times more cotton with the gin
  - demand for many new laborers to grow cotton - INCREASES DEMAND FOR SLAVES