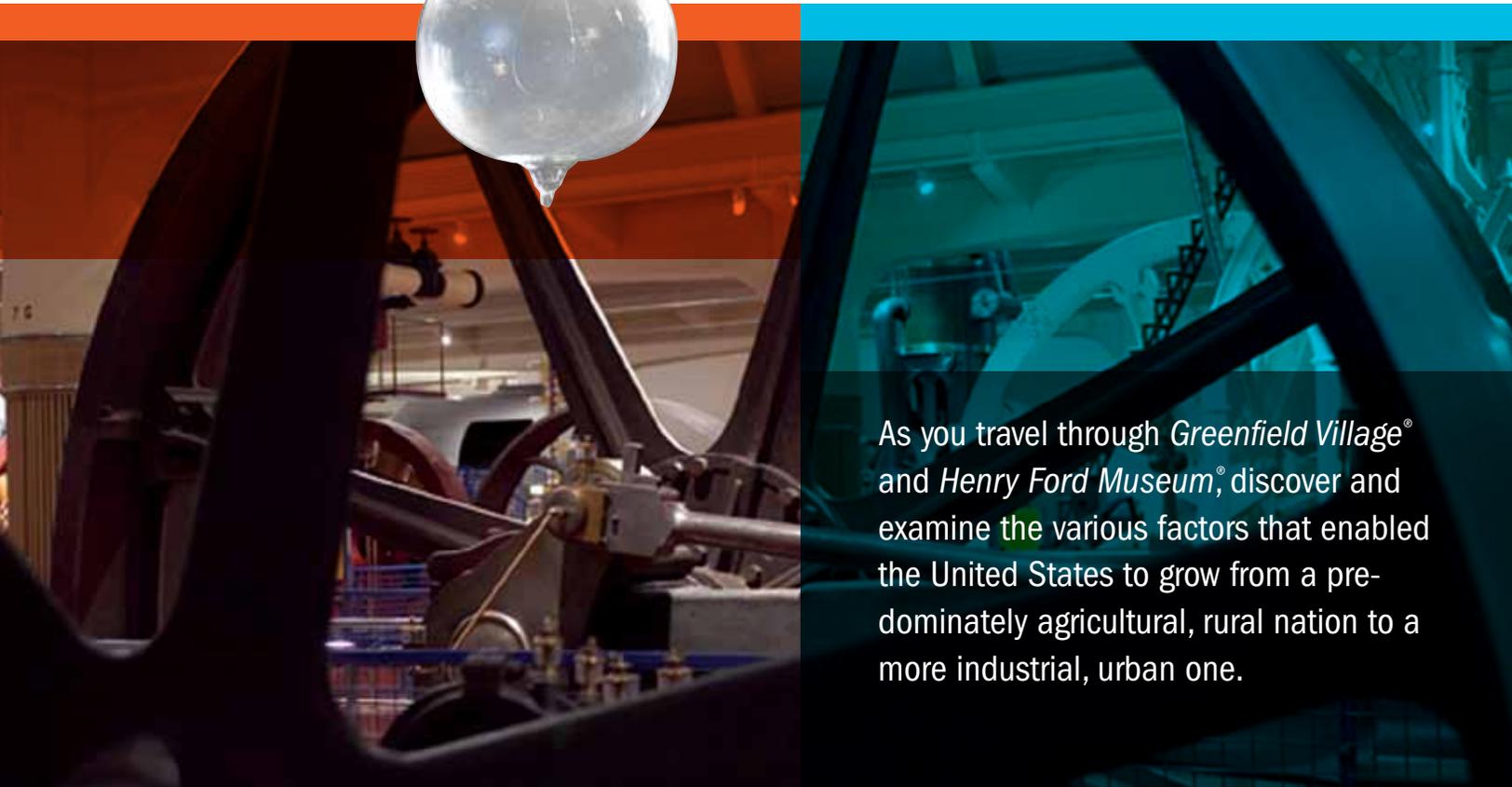


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# America's Industrial Revolution

impact on technology and innovations



As you travel through *Greenfield Village*<sup>®</sup> and *Henry Ford Museum*<sup>®</sup>, discover and examine the various factors that enabled the United States to grow from a pre-dominately agricultural, rural nation to a more industrial, urban one.

# Greenfield Village

America's Industrial Revolution Itinerary

## From Home to Factory Production

An important aspect of the Industrial Revolution was the replacement of traditional handcraft processes with machine and factory processes. Tasks, such as cloth production, that had previously been completed by family members in the home were now performed by workers in mills and factories.

**sites to visit:** (see Greenfield Village map)

### 1 Daggett Farmhouse (1760)

- Describe the following cloth-production tasks that take place in the Daggett Home:

Carding: \_\_\_\_\_

Spinning: \_\_\_\_\_

- How much time and skill were required to complete each of these tasks?

\_\_\_\_\_  
\_\_\_\_\_

### 2 Gunsolly Carding Mill (1850-1890)

- List two ways that technological advances and new sources of power changed both the task of carding and textile production?

\_\_\_\_\_  
\_\_\_\_\_

probe ▶▶

into the 21st century

Check the labels on your own clothing. Where and how does clothing production occur today? What do you think have been the advantages and disadvantages of technological advances in cloth production?

**drawing conclusions:**

- What factors led to the change from home to factory production?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Agriculture: Regional Differences, Technological Changes

Though new agricultural techniques and implements were available prior to the Civil War, many Southern plantation owners did not mechanize agricultural production, as their dependence on enslaved labor already made their crops profitable.



**sites to visit:** (see Greenfield Village map)

- 3 Susquehanna Plantation (1860)
- 4 Firestone Farm (1885)

- Compare and contrast Susquehanna Plantation and Firestone Farm

	Susquehanna Plantation	Firestone Farm
Location/Region	_____	_____
Crops grown	_____	_____
Cultivated and harvested by whom	_____	_____
Tools or technologies used	_____	_____

### drawing conclusions:

- How do regional differences and industrialization impact economic choices at Susquehanna Plantation and Firestone Farm?

\_\_\_\_\_

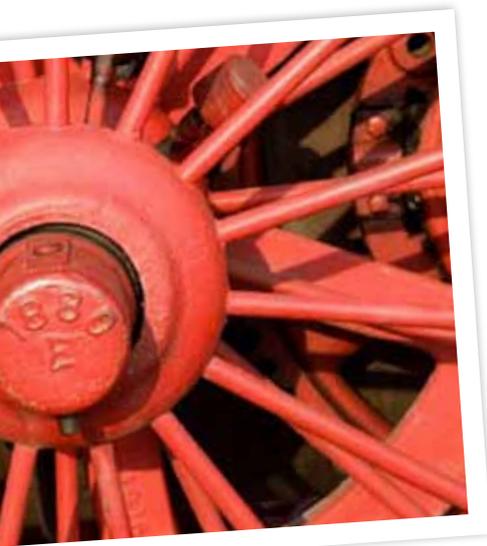
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probe  into the 21st century

Where is your food produced? Who grows and processes it? How do you think modern farm work differs from the farm work done at Susquehanna Plantation and Firestone Farm?



## Greenfield Village Continued

### Transportation: Steam Power and the Railroads

Railroads played a significant role in American industrial development. The railroad epitomized technological and commercial development during the 19th century. During this period, railroads opened the West to settlement, trade and natural resource development.

**site to visit:** (see Greenfield Village map)

**5** Detroit, Toledo & Milwaukee Roundhouse (1884)

- What were the advantages of using steam locomotives for moving people and goods in the 1800s and early 1900s? What were the disadvantages?

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- What was the purpose of a roundhouse? What types of work were performed at roundhouses?

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### drawing conclusions:

- How did new rail transportation networks help establish the United States as an industrial power?

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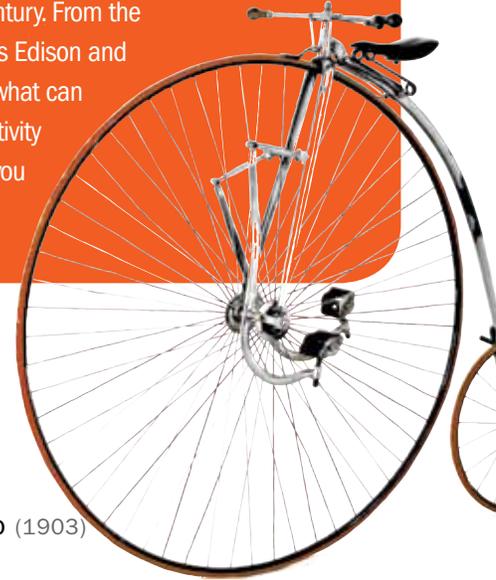
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## probe

into the 21st century

What types of fuel or power systems are used today in transportation? What are the negative and positive consequences of relying on these fuels or systems?

Creativity and innovation are considered essential skills for the 21st century. From the experience of Thomas Edison and the Wright Brothers, what can you learn about creativity and innovation that you can use today?



## Invention and Entrepreneurship

Invention and innovation fueled the Industrial Revolution through the development and improvement of new processes, devices, tools, machines and systems. Entrepreneurial individuals, groups and businesses fostered a culture of American ingenuity, creativity and innovation.

**sites to visit:** (see Greenfield Village map)

### 6 Menlo Park Laboratory (1879)

- How did Thomas Edison acquire the knowledge and skills to invent and innovate at Menlo Park laboratory?

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- Identify two of his innovations or inventions, and tell how they have changed over time.

THEN (example: electric pen):

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NOW (example: copy machine):

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### 7 Wright Cycle Shop (1903)

- How did the Wright Brothers acquire the knowledge and skills to invent an airplane?

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- How has their invention changed over time?

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### drawing conclusions:

- What qualities did Thomas Edison and the Wright Brothers share? How did their inventions and innovations impact society?

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# Henry Ford Museum

America's Industrial Revolution Itinerary

## Industry and Mass Production

The greatest symbol of American mass production is Henry Ford's Model T. Technological advances in manufacturing processes and materials dramatically increased the flow and production of goods. Factories churned out a dazzling array of affordable goods for a growing middle class of consumers.

**sites to visit:** (see Henry Ford Museum map)

- 1 From *Craftmanship to Mass Production* video
- 2 Made in America: Manufacturing

- Watch the one-minute video from *Craftmanship to Mass Production* and list a few of its main points.

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- Select a machine or tool in the Made in America: Manufacturing exhibit that was used in the production of a common, everyday object. Complete the following:

Name of machine or tool: \_\_\_\_\_

Name of product it made or helped make: \_\_\_\_\_

How do you think the manufacturing of this product has changed over time?

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How has the product itself changed over time?

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- Select a product in the exhibit and complete the following:

Name of product: \_\_\_\_\_

How is the product used today?

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How do you think the product has changed over time?

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## drawing conclusions:

- What has been the impact of mass production on society and the economy?

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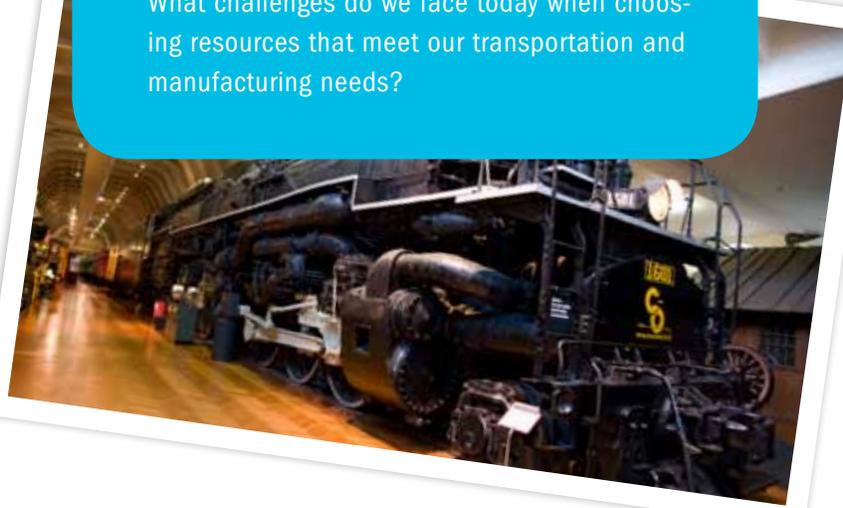


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What challenges do we face today when choosing resources that meet our transportation and manufacturing needs?



## Powering the Industrial Revolution

The development of new power sources was critical to the Industrial Revolution. The introduction of the steam engine, the first power source not relying on animals, water or wind accelerated industrial growth. Mills and factories could now be built anywhere and could operate all day and all year.

sites to visit: (see Henry Ford Museum map)

- 3 Newcomen Engine
- 4 Tower of Power
- 5 Made in America: Power

- Find the Newcomen Engine. Why is it significant? What was it used for? Examine it closely. What kinds of materials and what kinds of skills do you think were needed to build it?

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- As you look around the rest of the exhibit, notice how new uses developed for steam power. List one of these new uses.

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- Look for the light bulbs and the yellow signs to compare the power you can generate using the Tower of Power, with the power they generate.

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### drawing conclusions:

- Why do you think new power sources were important to the Industrial Revolution?

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How do you think a product you use today will change in the future? What changes would you like to make to a product you use to improve its use or value?

# Henry Ford Museum Continued

## Industry and the Labor Force

New manufacturing methods required new skills and new ways of working. Workers responded to change in the workplace in a variety of ways.

**sites to visit:** (see Henry Ford Museum map)

- 6 Managing Mass Production & People behind the Machines
- 7 Creating the Model T

• What innovations did Henry Ford introduce to automobile manufacturing?

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• Who do you think benefited from these innovations?

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• Find evidence at the sites you have visited that provides clues into the life of the 20th-century labor force. What did you learn about workers and workplaces from this evidence?

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### drawing conclusions:

• What have been the consequences, both positive and negative, of industrialization? Consider the viewpoints of both manufactures and workers.

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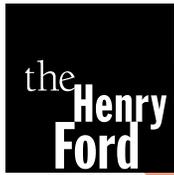
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probe ►► into the 21st century

What challenges do workers face today?  
What traits and skills do you think are essential for today's workers?



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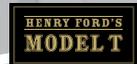
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Benson Ford Research Center

Josephine Ford Plaza



Ford Road

Firestone Lane

Mill Road

State Street

Junction Street

Bagley Avenue

Washington Blvd.

State Street

Christie Street

Main Street

Post Road

Christie Street

Maple Lane

Burbank Lane



3

1

b

### Greenfield Village



General Tickets & Membership



Gift Shop



Restrooms



Information



Public Telephone



Mold-A-Rama Souvenirs



Special Needs Rentals



Emergency Issues  
please contact any staff member

### sites to visit:

Home to Factory Production

- 1 Daggett Farmhouse
- 2 Gunsolly Carding Mill

Agriculture: Regional Differences,

Technological Changes

- 3 Susquehanna Plantation
- 4 Firestone Farm

Transportation: Steam Power and the Railroads

- 5 Detroit, Toledo and Milwaukee Roundhouse

Invention and Entrepreneurship

- 6 Menlo Park Laboratory
- 7 Wright Cycle Shop

### If you have the time, visit

Home to Factory Production

- a Weaving Shop
- b Cotswold Forge
- c Armington and Sims Machine Shop

Transportation: Steam Power and the Railroads

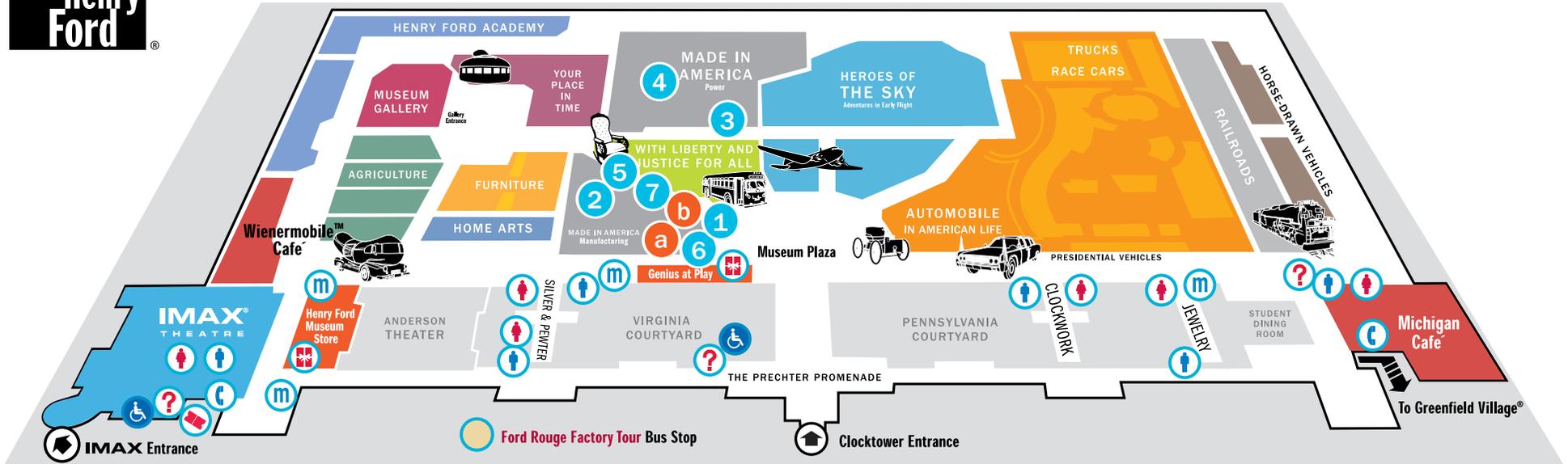
- d Suwannee Steam Boat



Weiser Railroad Train Station

Inventing and Entrepreneurship

- e Wright Home



## Henry Ford Museum

- General Tickets & Membership
  - Gift Shop
  - Women's Restrooms
  - Men's Restrooms
  - Information
  - Public Telephone
  - Mold-A-Rama Souvenirs
  - Special Needs Rentals
- 
- Emergency Issues**  
please contact any staff member

### sites to visit:

#### Industries and Mass Production

- 1** From *Craftsmanship to Mass Production* video
- 2** Made in America: Manufacturing

#### Powering the Industrial Revolution

- 3** Newcomen Engine
- 4** Tower of Power
- 5** Made in America: Power

#### Industry and the Labor Force

- 6** Managing Mass Production and People Behind the Machines
- 7** Creating the Model T

### If you have the time, visit

#### Industry and the Labor Force

- a** Build a Model T Guided Activity
- b** Henry's Assembly Line Guided Activity

**reflective** Post-Visit Thought-Starter

Has America's Industrial Revolution ended? Validate your point.