



America's Greatest History Attraction

## CURRICULUM CONNECTIONS

### Science and Technology During the Industrial Revolution Lesson Plans

<http://www.thehenryford.org/education/erb/Science&TechnologyDuringIndustrialRevolution.pdf>

Lesson plans. Select lesson plans that most directly support The Henry Ford's educational theme "Science and Technology." Created by participants in the National Endowment for the Humanities Landmarks of American History and Culture Workshops for School Teachers: America's Industrial Revolution at The Henry Ford, 2009, 2010, 2011.

### Michigan Science Grade Level & High School Content Expectations

#### Grade 3

**S.IA.03.12** Share ideas about science through purposeful conversation in collaborative groups.

#### Grade 6

**S.IP.06.11** Generate scientific questions based on observations, investigations, and research.

**S.IP.06.12** Design and conduct scientific investigations.

### Michigan Social Studies Grade Level Content Expectations

#### Grade 4

**H3.0.1** Use historical inquiry questions to investigate the development of Michigan's major economic activities (agriculture, mining, manufacturing, lumbering, tourism, technology, and research) from statehood to present. (C, E)

- What happened?
- When did it happen?
- Who was involved?
- How and why did it happen?
- How does it relate to other events or issues in the past, in the present, or in the future?
- What is its significance?

**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 to the present (e.g., 1837-1900, 1900-1950, 1950-2000). (G)

**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. (E)

**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). (H)

**Grade 5**

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

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

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

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

**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.

**Grade 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 in:

- 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)

**U6.2.1** 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)

## **Grades 9-12 – US History & Geography**

**6.1.1** Factors in the American Industrial Revolution – Analyze the factors that enabled the United States to become a major industrial power, including

- gains from trade
- organizational “revolution” (e.g., development of corporations and labor organizations)
- advantages of physical geography
- increase in labor through immigration and migration
- economic policies of government and industrial leaders (including Andrew Carnegie and John D. Rockefeller)
- technological advances

**6.1.5** A Case Study of American Industrialism – Using the automobile industry as a case study, analyze the causes and consequences of this major industrial transformation by explaining

- the impact of resource availability
- entrepreneurial decision making by Henry Ford and others
- domestic and international migrations
- the development of an industrial work force
- the impact on Michigan
- the impact on American society

**6.3.1** Social Issues – Describe at least three significant problems or issues created by America’s industrial and urban transformation between 1895 and 1930 (e.g., urban and rural poverty and blight, child labor immigration, political corruption, public

**6.3.2** Causes and Consequences of Progressive Reform – Analyze the causes, consequences, and limitations of Progressive reform in the following areas

- major changes in the Constitution, including 16th, 17th, 18th, and 19th Amendments
- new regulatory legislation (e.g., Pure Food and Drug Act, Sherman and Clayton Anti-Trust Acts)
- the Supreme Court’s role in supporting or slowing reform
- role of reform organizations, movements and individuals in promoting change (e.g., Women’s Christian Temperance Union, settlement house movement, conservation movement, and the National Association for the Advancement of Colored People, Jane Addams, Carrie Chapman Catt, Eugene Debs, W.E.B. DuBois, Upton Sinclair, Ida Tarbell)

- efforts to expand and restrict the practices of democracy as reflected in post-Civil War struggles of African Americans and immigrants

### **Grades 9-12 – Civics**

- 3.1.4** Identify the role of independent regulatory agencies in the federal bureaucracy (e.g., Federal Reserve Board, Food and Drug Administration, Federal Communications Commission). (See USHG 6.3.2)
- 3.1.7** Explain why the federal government is one of enumerated powers while state governments are those of reserved powers.
- 6.1.1** Identify and research various viewpoints on significant public policy issues.

### **Michigan English Language Arts Grade Level & High School Content Expectations**

#### **Grade 6**

- W.GN.06.03** Formulate research questions using multiple resources and perspectives that allow them to organize, analyze and explore problems and pose solutions that culminate in a final presented project.
- W.P.R. 06.01** Set a purpose, consider audience, and replicate author styles and patterns when using an informational text.
- R.IT. 06.02** Analyze text patterns, including descriptives, chronological sequences and problem/solution.
- R.CM.06.4** Apply significant knowledge from grade level science, social studies and mathematics text.

### **Common Core State Standards for English Language Arts**

#### **Grade 3**

- RI.3.7** Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
- W.3.8** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

### **National Standards in World History Content**

- 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.