



America's Greatest History Attraction

## CURRICULUM CONNECTIONS

### Test Drive Smart Tools

(<http://www.thehenryford.org/events/testDriveSmartTools.aspx>)

Self-Guided Activity at Ford Rouge Factory Tour. Handle a "smart tool" that workers use on the factory floor and simulate steering wheel installation on a Ford F-150 pickup.

### Michigan Science Grade Level Content Expectations

#### Kindergarten:

- S.IP.00.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.00.12** Generate questions based on observations.
- S.IP.00.13** Plan and conduct simple investigations.
- S.IP.00.14** Manipulate simple tools (for example: hand lens, pencils, balances, non-standard objects for measurement) that aid observation and data collection.
- P.FM.00.31** Demonstrate pushes and pulls on objects that can move.
- P.FM.00.32** Observe that objects initially at rest will move in the direction of the push or pull.
- P.FM.00.33** Observe how pushes and pulls can change the speed or direction of moving objects.

#### Grade 1

- S.IP.01.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.01.12** Generate questions based on observations.
- S.IP.01.13** Plan and conduct simple investigations.
- S.IP.01.14** Manipulate simple tools (for example: hand lens, pencils, rulers, thermometers, rain gauges, balances, non-standard objects for measurement) that aid observation and data collection.

#### Grade 2

- S.IP.02.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.02.12** Generate questions based on observations.
- S.IP.02.13** Plan and conduct simple investigations.
- S.IP.02.14** Manipulate simple tools (ruler, meter stick, measuring cups, hand lens, thermometer, balance) that aid observation and data collection.

### **Grade 3**

- S.IP.03.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.03.12** Generate questions based on observations.
- S.IP.03.13** Plan and conduct simple and fair investigations.
- S.IP.03.14** Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).
- P.FM.03.35** Describe how a push or a pull is a force.
- P.FM.03.36** Relate a change in motion of an object to the force that caused the change of motion.
- P.FM.03.37** Demonstrate how the change in motion of an object is related to the strength of the force acting upon the object and to the mass of the object.

### **Grade 4**

- S.IP.04.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.04.12** Generate questions based on observations.
- S.IP.04.13** Plan and conduct simple and fair investigations.
- S.IP.04.14** Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer, graduated cylinder/beaker).

### **Grade 5**

- S.IP.05.11** Generate scientific questions based on observations, investigations, and research.
- S.IP.05.12** Design and conduct scientific investigations.
- S.IP.05.16** Identify patterns in data.

### **Grade 6**

- S.IP.06.11** Generate scientific questions based on observations, investigations, and research.
- S.IP.06.12** Design and conduct scientific investigations.
- S.IP.06.16** Identify patterns in data.

### **Grade 7**

- S.IP.07.11** Generate scientific questions based on observations, investigations, and research.
- S.IP.07.12** Design and conduct scientific investigations.
- S.IP.07.16** Identify patterns in data.

## **Michigan Science High School Content Expectations**

### **Physics**

- P3.1A** Identify the force(s) acting between objects in “direct contact” or at a distance.
- P3.1c** Provide examples that illustrate the importance of the electric force in everyday life.
- P3.1d** Identify the basic forces in everyday interactions.
- P4.1c** Explain why work has a more precise scientific meaning than the meaning of work in everyday language.
- P4.1d** Calculate the amount of work done on an object that is moved from one position to another.
- P4.3A** Identify the form of energy in given situations (e.g., moving objects, stretched springs, rocks on cliffs, energy in food).
- P4.3C** Explain why all mechanical systems require an external energy source to maintain their motion.

## **Michigan Social Studies Grade Level Content Expectations**

### **Grade 1**

- H2.0.6** Compare life today with life in the past using the criteria of family, school, jobs, or communication.

### **Grade 2**

- H2.0.4** Describe changes in the local community over time (e.g., types of businesses, architecture and landscape, jobs, transportation, population).

### **Grade 3**

- G4.0.1** Describe major kinds of economic activity in Michigan today, such as agriculture (e.g., corn, cherries, and dairy), manufacturing (e.g., automobiles, wood products), services and tourism, research and development (e.g., Automation Alley, life sciences corridor, university communities), and explain the factors influencing the location of these economic activities.

### **Grade 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.
- E1.0.5** Explain how specialization and division of labor increase productivity (e.g., assembly line).

## **Michigan Social Studies High School Content Expectations**

### **United States History & Geography**

- 9.1.1** Economic Changes – Using the changing nature of the American automobile industry as a case study, evaluate the changes in the American economy created by new markets, natural resources, technologies, corporate structures, international competition, new sources and methods of production, energy issues, and mass communication.

### **Economics**

- 1.2.3** Investment, Productivity and Growth – Analyze the role investments in physical (e.g., technology) and human capital (e.g., education) play in increasing productivity and how these influence the market.

### **National Curriculum Standards for Science**

Science as Inquiry  
Science and Technology  
Science in Personal and Social Perspectives  
History and Nature of Science  
Life Science

### **National Curriculum Standards for Social Studies**

#### **Strand**

**VII** Production, Distribution, and Consumption

**VIII** Science, Technology, and Society