



## NEW CURRICULUM Reinforcing Post-Visit Activity Helper for Teachers

### SELECTED CURRICULUM CONNECTIONS AT A GLANCE

#### GRADE 2:

E1.0.2 Identify businesses in the local community.

E1.0.4 Describe the natural, human and capital resources needed for production of a good or service in a community.

#### GRADE 3:

G4.0.1 Describe the major kinds of economic activity in Michigan today.

E1.0.4 Describe how entrepreneurs combine natural, human and capital resources to produce goods and services in Michigan.

#### GRADE 4:

H3.0.1 Use historical inquiry activities to investigate the development of Michigan major economic activities.

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

E1.0.5 Explain how specialization and division of labor increase productivity.

#### GRADES 6-7:

H1.4.1 Describe and use cultural institutions to study an era and a region.

#### GRADES 9-12:

USHG ERA6.1.5 A Case Study of American Industrialization: Using the automobile industry as a case study, analyze the causes and consequences of this major industrial transformation.

## REVIEW QUESTIONS FOR STUDENTS

1. **What is manufactured** at the Dearborn Truck Plant (DTP)? (Ford F-150 pickup.)
2. **What people** (human resources) are required to manufacture the Ford F-150? (Assembly line workers, parts delivery workers, team leaders, line supervisors, engineers, millwrights, electricians, carpenters, computer/information technology workers.)
3. **What tools and equipment** (capital resources) are required to manufacture the Ford F-150? (Robots, tools, machines and equipment such as skillets, torque wrenches, articulated arms, “happy chair,” etc.)
4. **What natural resources** are required to manufacture the Ford F-150? (Land, air, water.)
5. **What production method** is used to manufacture the Ford F-150? (Moving assembly line.) How is it efficient? (The flow of production is continuous, and the assembly line tasks and workers are divided and specialized.)
6. **What examples** of division of labor and specialization did you see on the final assembly line of the Ford F-150 that help increase productivity? (Windshield install; moon roof install; door build – door speaker, side view mirror, door handles and wiring; box build – taillights, decals, Ford blue oval logo; headliner install; instrument panel install; steering wheel and air-bag install; tire install; drive shaft install; engine install; test area – water test, roll test, shake-and-rattle test.)
7. **How has the DTP** been designed for worker safety and comfort? (Natural lighting that’s easier on the eyes; wide aisles that keep team members safe; earth-friendly heating and cooling systems that create a comfortable workplace; skillets help team members work safely and efficiently by making it easier to install parts in hard-to-reach places.)
8. **What is flexible manufacturing?** (The Dearborn Truck Plant is a model of “flexible manufacturing.” Flexible manufacturing is the ability to make more than one model on the same assembly line. The DTP assembly line can be changed to produce up to nine models of vehicles on three different platforms: regular, medium and long. This allows a manufacturer to quickly change its production schedules to meet consumer demand.)
9. **What is lean manufacturing?** (Lean manufacturing is a management philosophy focusing on reduction of waste in manufactured products. By eliminating waste, quality is improved, production time is reduced and cost is reduced. The just-in-time inventory method reduces in-process inventory and its associated costs such as space needed to store parts and related costs.)

Curriculum Reinforcing Post-Visit Activity Helper for Teachers *Continued on the back*

## TIMELINE (Milestone Dates)

- 1903 Ford Motor Company founded.
- 1908 Ford introduces the Model T.
- 1913 Ford engineers introduce a moving assembly line for auto production.
- 1915 Ford introduces the \$5-a-day wage for hourly workers. Henry Ford purchases 2,000 acres of marshland along the Rouge River in Dearborn.
- 1917 Construction of Rouge Plant begins.
- 1918 First products of the Rouge are Eagle Boats for the U.S. Navy.
- 1929 Total Rouge employment climbs to 103,000.
- 1941 Ford signs contract with United Auto Workers (UAW), the last major auto company to do so.
- 1943-45 Wartime production at the Rouge contributes to Detroit's reputation as "The Arsenal of Democracy."
- 1993 Ford is first automaker to have dual air bags as standard equipment in most cars.
- 1997 Ford automotive plants first to achieve world environmental standard ISO 14001.
- 1997 UAW and Ford Motor Company sign Rouge Viability Agreement to revitalize the Rouge.
- 1999 The Model T is named Car of the Century at an internationally attended gala in Las Vegas.
- 2000 The redevelopment of the entire Ford Rouge Center begins. It is to include a new assembly plant as the centerpiece of the nation's largest industrial redevelopment project and feature the world's largest living roof.
- 2003 Henry Ford named most influential entrepreneur in American history.
- 2004 New F-150 truck production begins at the new state-of-the-art Dearborn Truck Plant.



### Suggested activity for students:

Have students research and list state, national and international events that occurred during these milestone dates in the history of manufacturing.

## RELATED GLOSSARY (reinforces selected Social Studies terms)

- **Capital resources** – Human-made goods, tools, machines and buildings used to produce other goods and services.
- **Division of labor** – Workers perform only one or a few of the many steps in a production process. Division of labor such as that used on an assembly line is a form of specialization.
- **Entrepreneur** – Person who takes a risk to start a business, organizing the resources needed to make a product or provide a service. Henry Ford was an entrepreneur.
- **Flexible manufacturing** – A manufacturing system in which there is some flexibility that allows the system to react in the case of changes, whether predicted or unpredicted.
- **Human resources** – The people (labor) used to produce goods and services including their health, physical strength, motivation, knowledge and skills.
- **Install** – Assembly line processes at the Dearborn Truck Plant where car parts such as windshields, steering wheels and moon roofs are added to, or installed, in the truck.
- **Mass production** – Making goods on a large scale, using specialization and technology.
- **Moving assembly line** – Production method pioneered by Henry Ford in 1913 in which parts are moved to the worker rather than the worker to the parts produce an automobile.
- **Natural resources** – "Gifts of nature" used in production of a good or service such as air, water, land and animal.
- **Opportunity cost** – The cost (sacrifice) of choosing one option over an alternative one that may be equally desired. Opportunity cost is the cost of pursuing one choice instead of another. Every action or choice has an opportunity cost.

*Adapted from the Michigan Council for Economic Education and the Michigan Department of Education*

## DID YOU KNOW?

- **Dearborn Truck Plant (DTP)** was the first new assembly plant for Ford in North America since 1986.
- **DTP** can make more than 60 trucks an hour.
- The **DTP assembly line** is more than 4 miles long.
- There are **more than 3,000 parts** in a Ford F-150.
- There are **more than 250 stations** on the assembly line.
- **Each workstation** is specially designed for the comfort and safety of DTP team members.
- DTP, the Dearborn Body Shop and the Dearborn Paint Plant have **more than 280 robots** combined.
- **More than 1 mile** of wiring goes into each F-150.
- **Ford leads** the automotive industry in the use of recycled materials.
- Ford was **the first** automaker to offer seat belts.
- **Ford F-Series sales** in 1948: 290,000; 2002: 813,701.

### BONUS POST-VISIT ACTIVITY:

Through the decision-making process, people consider the costs and benefits of an individual or household choice. Have students use or adapt the following decision-making process to evaluate the purchase of a car, truck, bicycle, video game, electronic equipment, etc.:

- **Identify** the item to be purchased.
- **Gather** information.
- **Explore** alternatives.
- **Determine** the opportunity cost. What must be given up to make this purchasing choice?
- **Make** the decision.
- **Take** action.
- **Evaluate** decision.

**THANK YOU FOR VISITING THE FORD ROUGE FACTORY TOUR**  
If you like the newly designed presentation on the walkway and the post-visit activity helper, please email your comments to: [paulag@TheHenryFord.org](mailto:paulag@TheHenryFord.org).