

The Henry Ford® Trip Helper | They Said It Could Not Be Done for teachers

approximately 2.5-hour visit time

Enrich your field trip experience with these new “for the teachers, by the teachers” themed itineraries. Created by **The Henry Ford 2009 Teacher Fellows** and tested with their students, these new curriculum-aligned tools for teachers, group leaders and students will deepen student learning and understanding of selected topics, sites and exhibits.

SUGGESTED PRE-VISIT ACTIVITIES

- Use the following background information as you wish to prepare students and group leaders for the *Ford Rouge Factory Tour*:

In the southwest corner of metropolitan Detroit, an quiet transformation is taking place. Once entirely an inner urban area that fell to the ravages of industrial waste, now more than 10 acres are transforming this industrial area into an environmentally friendly, life-generating industrial complex. Following Ford’s vision and uncanny ability to create a balance between seemingly conflicting enterprises, the Rouge Factory and Living Roof have done just that. Why come here to seek out an oasis of wetlands, discover wildlife and what could be considered a small park in the inner city when you could just visit the local recreational center? Here is the reason you need to make a trip to this revolutionary complex. The *Ford Rouge Factory Tour* has achieved a near perfect balance between industry and nature. While developing products that meet the needs of the automotive industry, it has also balanced the environmental aspects by providing an area that cleanses the storm water provides a sanctuary for wildlife long thought to be forever gone from this region and an air quality that is typically enjoyed by many rural residents.

- Discuss with students why testing water for quality is important. Look at the different basic tests and research benefits of having the results of these tests. What is pH? What does it mean? Why do we need to know if there are nitrates or phosphates in the water? Practice one or two of the tests before going to the site so students are familiar with the procedures. Record the results of the local school water tests in their journals, and save for comparison with the water found at the Rouge Plant.
 - Acid rain: How does this affect the water in the city you live in, and how does it compare with the water at the Rouge Plant?
 - Emphasize how scientists use these same data collection procedures to determine answers to their questions and that this gathering of data is one portion of the scientific process.

- Predict the outcome, then sample water at school to compare/contrast and determine if your hypothesis was correct.
- Would you expect any type of ecosystem to be present at the Rouge Plant? What would you expect to see here?
- Prepare a field journal that you will use to draw examples of positive environmental impacts (wildlife, Plant life, clean water flow, air quality, etc.). Leave room for taking notes while in the field!
- Consider assembling and taking the following supplies to enhance and facilitate your experience: backpack, colored pencils, pens, field journals, camera, field guides to wildlife (birds, wildflowers, wetlands), binoculars.

ON-SITE ACTIVITIES

- Visit the following stations in any order and use The Ford Rouge: They Said It Could Not Be Done handout to encourage student observation, critical thinking and problem-solving skills.
 - **Station 1:** Art of Manufacturing Theater (capacity 75), 15 minutes
 - **Station 2:** Legacy Theater (capacity 75), 15 minutes
 - **Station 3:** Observation Deck, 30 minutes
 - **Station 4:** Living Laboratory, mid-April through mid-October, 45 minutes
 - **Station 5:** Final Assembly at the Dearborn Truck Plant, 45 minutes

SUGGESTED POST-VISIT OR EXTENSION ACTIVITIES

- Making connections between what the Dearborn Truck Plant is doing and continued improvements in the storm water and water reentering the Rouge River gives validity to what the Rouge Plant is doing to bring an equalized balance between industry and nature. Economic, geographic and social impacts can be researched and utilized as part of this trip. Connecting Michigan’s natural resources to this Plant and famous historical events (taconite, Edmund Fitzgerald, Zug Island, Tilden Mine) is another post-visit connection that can easily be utilized. This will bring GLCEs from both social studies and economics into the science curriculum.
- Develop an essay that gives proof that industry and nature can be in balance. In light of the fact that industry and the environment are two seemingly conflicting enterprises, how has the Dearborn Truck Plant created a positive balance? Do you think that this can be repeated in other urban industrial settings? Why or why not?
- What are some signs of a positive ecological impact that the Dearborn Truck Plant has implemented that you can

The Henry Ford® Trip Helper | They Said It Could Not Be Done for teachers

see? Why are these considered positive signs? Explain your answer.

- What did you record in your journal that substantiates your claims?
- Complete your digital scrapbook and make a PowerPoint or iMovie that shows your experience.

Discover the history and science of the Ford Rouge Complex. Visit each of the stations below in any order to learn about the past, present, and future of automobile manufacturing.

Related Michigan Grade Level Content Expectations Science

6 - S.IP06.11, S.IP06.12, S.IP06.13, S.IP06.16, L.OL.06.52, L.EC.06.23, S.RS.06.19, PEN.06.41, PEN.06.42, L.OL.06.51, L.EC.06.11, L.EC.06.31, L.EC.06.32, L.EC.06.41

Visit thehenryford.org/education/resourcebank.aspx for curriculum connections

Station 1: Art of Manufacturing Theater



1. Describe this experience.

2. What are the steps in building a truck?

Station 2: Legacy Theater

1. What else has been produced at the Rouge?

2. Why was this factory so unique in the manufacturing industry?

3. How did the location of this factory benefit Henry Ford?

4. Research taconite and the connection between the Ford Rouge Factory and the Upper Peninsula. How did this resource save the factory?

5. What was Ford's inspiration for the assembly line?

6. How has the assembly line changed over time?

Station 3: Observation Deck



Explain the benefit of a Living Roof.

1. Why did they choose sedum?

The Henry Ford® Trip Helper | They Said It Could Not Be Done for students

2. Why is porous pavement better than cement?

3. Other than a Living Roof, how else is the factory using Plants to save energy costs?

4. Compare and contrast this factory with a typical factory from the past.

Station 4: Living Laboratory (weather permitting, mid-April through mid-October)



1. Prior to visiting the factory, what did you think the site would look like? How is the Ford Rouge Factory different?

2. What local wildlife has returned to the restored wetlands?

3. What wildlife did you see?

4. Spend some time observing the wildlife in the Living Laboratory. Draw a bird, plant and insect that you see here.

5. Find the parts of this ecosystem, and draw or take a picture. Explain how each part depends upon another. For example, birds build nests in trees and low growth.

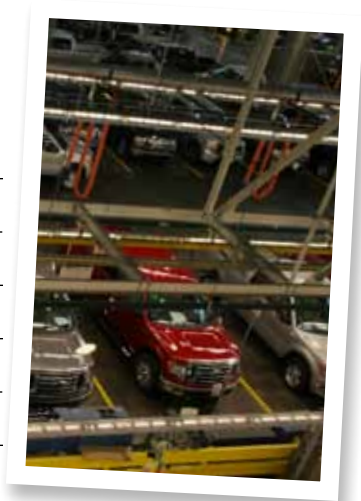
6. How long would you suppose this remediation takes?

7. Would this be considered ecological succession?

The Henry Ford® Trip Helper | They Said It Could Not Be Done for students

Station 5: Final Assembly at the Dearborn Truck Plant

1. Describe the relationship between robots and humans in this factory. Are they dependent on each other?



2. List some of the jobs, tools and equipment required to manufacture the Ford F-150.

3. Why is the assembly line an efficient method of production?

4. What are some examples of a production robot's capabilities?

5. What are some examples of reusing and recycling in the factory?

6. How could this be a model for factories of the future?

7. Is this a feasible model for all factories?

8. How is the Dearborn Truck Plant a model of sustainable manufacturing?
