

**TEACHING AMERICAN HISTORY PROJECT**  
***Lesson Title - Henry Ford & the Assembly Line***  
***Russell T. Hart***

**Grade – 11**

**Length of class period – 55 min**

**Inquiry – (What essential question are students answering, what problem are they solving, or what decision are they making?)**

How are the old adages, "Work smarter, not harder!" and "Many hands make light work!" relevant in regards to the revolution of American mass production?

**Objectives (What content and skills do you expect students to learn from this lesson?)**

1. Students will illustrate in their own words, Henry Ford's 3 Principles of Assembly.
2. Students will contrast the automobile production process before and after the advent of the assembly line.
3. Students will construct a system of improved efficiency for a task in their own lives.

**Materials (What primary sources or local resources are the basis for this lesson?) – (please attach)**

Students will receive a copy of Henry Ford's essay, "The First Assembly Line" (attached)

Students will receive a series of selected photos to examine.

Students will receive a series of questions pertaining to the essay.

**Activities (What will you and your students do during the lesson to promote learning?)**

1. As a whole group (or as an assignment the previous night) students will read (orally/or silently) the attached primary source essay: The First Assembly Line.
2. Students may individually/in pairs/or divided into 4 groups answer the attached questions, reporting their results to the group.
3. For homework, students will apply the concepts in Ford's Principles, adapting them to one of their own academic tasks or household chores to work more efficiently.
4. The following day, students will share their Efficiency Models with the whole group.

**How will you assess what student learned during this lesson?**

1. Students will be tested on Ford's Principles, the effects of the assembly line, etc. on their chapter test.
2. Teacher may grade Efficiency Models if desired
3. Teacher will circulate among groups and informally assess answers to the first 4 questions.

**Connecticut Framework Grade Level Expectations –**

*Standard 1.427- Explain how technological developments have changed our perceptions and understanding of location and space in the modern world*

*Standard 2.2 - Interpret information from a variety of primary sources*

## **Background**

Henry Ford was the first car maker to use an assembly line to improve the way that cars were made. An assembly line is a line of workers and equipment that puts a product together piece by piece using teamwork. Rather than have one worker do every job in building one car, each worker does the same job on many different cars each day. This method of making cars was much cheaper and quicker than earlier methods. As a result of this increased efficiency, Ford was able to pay his workers much better salaries than other car makers-- five dollars for an eight hour day. This allowed many of his workers to be able to afford to buy a Ford car themselves.

---

A Ford car contains about five thousand parts—that is counting screws, nuts, and all. Some of the parts are fairly bulky and others are almost the size of watch parts. In our first assembling we simply started to put a car together at a spot on the floor and workmen brought to it the parts as they were needed in exactly the same way that one builds a house. When we started to make parts it was natural to create a single department of the factory to make that part, but usually one workman performed all of the operations necessary on a small part. The rapid press of production made it necessary to devise plans of production that would avoid having the workers falling over one another....

The first step forward in assembly came when we began taking the work to the men instead of the men to the work. We now have two general principles in all operations—that a man shall never have to take more than one step, if possibly it can be avoided, and that no man need ever stoop over.

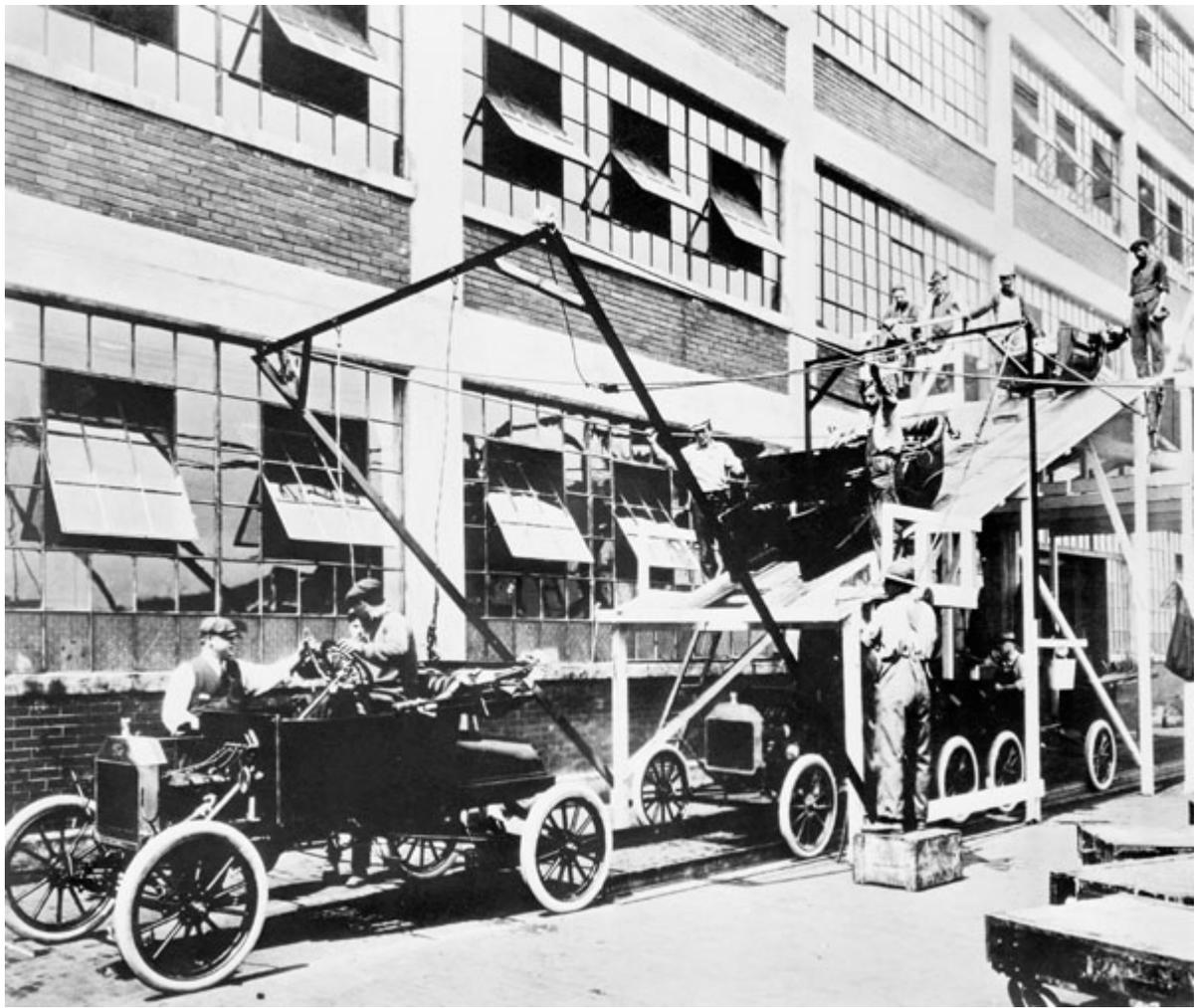
The principles of assembly are these:

1. Place the tools and the men in the sequence of the operation so that each component part shall travel the least possible distance while in the process of finishing.
2. Use work slides or some other form of carrier so that when a workman completes his operation, he drops the part always in the same place – which place must always be the most convenient place to his hand—and if possible have gravity carry the part to the next workman for his operation.
3. Use sliding assembling lines by which the parts to be assembled are delivered at convenient distances.

The net result of the application of these principles is the reduction of the necessity for thought on the part of the worker and the reduction of his movements to a minimum. He does as nearly as possible only one thing with only one movement...

Along about April 1, 1913, we first tried the equipment of an assembly line. We tried it on assembling the fly-wheel magneto. We try everything in a little way first—we will rip out anything once we discover a better way, but we have to know absolutely that the new way is going to be better than the old before we do anything drastic.

I believe that this was the first moving line ever installed. The idea came in a general way from the overhead trolley that the Chicago packers use in dressing beef. We had previously assembled the fly-wheel magneto in the usual method. With one workman doing a complete job, he could turn out from 35 to 40 pieces in a 9 hour day, or about 20 minutes to an assembly. What he did alone was then spread into 29 operations, that cut down the assembly time to 13 minutes, 10 seconds. Then we raised the height of the line eight inches—this was in 1914—and cut the time to 7 minutes. Further experimenting with the speed that the work should move at cut the time down to 5 minutes. In short, the result is this: by the aid of scientific study one man is now able to do somewhat more than four did only a comparatively few years ago. That line established the efficiency of the method and we now use it everywhere. The assembling of the motor, formerly done by one man, is now divided into eighty-four operations—those men do the work that three times their number formerly did.









*for the*  
**YOUNG BUSINESS MAN**

The Ford Runabout is a profitable partner and a happy companion for the boy who is making his mark in business and at school.

It reduces distance from a matter of miles to a matter of minutes. By saving time and effort, it makes larger earnings possible. And costing little to buy and keep going, it quickly pays for itself.

When vacation time rolls round the Runabout enables the young business man to reduce by hours the time between work and play.

Let us tell you how easy it is to buy a Ford on the Weekly Purchase Plan.

**THE RUNABOUT**  
**\$ 265**  
F. O. B. Detroit  
Demonstrable Run  
and Starter '95, 62114

FORD MOTOR COMPANY, DETROIT, MICHIGAN

## **Questions for: The First Assembly Line By Henry Ford**

- 1. What methods of production did the Ford Motor Co. use before the advent of the assembly line?**
- 2. In your own words, what were Ford's 3 principles of assembly?**
- 3. What precautions did Ford take before making any changes in his factory?**
- 4. What were 3 things that Ford wanted to reduce in his workers?**

**For homework:**

**5. After careful consideration, what specific Ford lessons can you apply to increase your own efficiency in a certain task that you do? (academic, household, etc.) Design a system to help you "Work smarter, not harder!", maximizing your efficiency and increasing your productivity. Prepare to share your Efficiency Model with the class tomorrow.**