



STUDEBAKER NATIONAL MUSEUM

STUDENT WORKBOOK

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NOTE TO TEACHERS:

This student workbook contains a brief history of Studebaker for students to read prior to their visit to the Studebaker National Museum, followed by student activity sheets. The **Museum Post-Visit Test** is **NOT** included in the student workbook and can only be found in the Teacher Guide, which also contains the blank activity sheets, an answer key, and additional information for teachers regarding Indiana academic standards and planning your trip to the Museum.

SECTION I: THE STUDEBAKER HISTORY

Historical Background and Important Ideas

The 1850 census reported a great change in the American way of life. The census noted that in earlier times, "the bulk of general manufacturing done in the United States was carried on in the small shop and the household by the labor of the family or individual proprietors who apprenticed assistants." By 1850, most manufacturing was done by a "system of factory labor, compensated by wages, and assisted by power."

This Industrial Revolution helped bring about a transportation revolution. South Bend factories in the mid- to late-19th century produced farm equipment and other necessities for life in rural America. Waterpower, steam power, and electricity were used to operate machinery. The same steam power that made factories possible also brought the steamboats and the railroads to carry farm and factory products into other regions of the country.

By the turn of the last century, the Studebaker Brothers Manufacturing Company was the largest wagon maker in the world. At the turn of the century, wagons, buggies, and carriages provided most of the transportation in our country. By 1925, the Indiana Highway Commission reported, "horse-drawn traffic has almost disappeared from our main highways. Such traffic has decreased rapidly in the past six years and now consists only of the local farm traffic."

The Studebaker Corporation was the only wagon company to successfully change production over to automobiles. Indiana played a major role in the development of the automobile. Over 200 types of cars were produced in Indiana during the first two decades of the 20th century. Elwood Haynes, for example, developed one of the nation's first automobiles in 1894. His Haynes Automobile Company sold more than seven thousand cars by 1916 but could not keep up with the assembly line production of Ford or General Motors.

There were many reasons for the decline of Indiana auto makers. Among them was the post-WWI recession, the Great Depression, and the lack of investment capital. The only Indiana auto maker that survived past World War II was Studebaker.

The Early Years of South Bend and Studebaker Brothers Company

In 1831, South Bend was just a group of log cabins and one framed house.

By 1837, the little village had grown into a town. It had around 1,200 people and many houses, shops, and stores.

In 1845, the University of Notre Dame was established north of the town. By the 1850s, there were 1,652 people living in South Bend, and it was growing bigger every year.

There was an industrial revolution taking place around the world. It was the reason that small towns kept growing into big cities.

What does the term “industrial revolution” mean?

In the early 1800s, many shops and stores were owned by an individual or by a small company and had just a few employees. Most of the work was done by hand or small machines. By 1850, factories started to become more common and they employed many people. Factories were built beside a river because the water provided both transportation routes and energy for steam and electricity. South Bend, located on the St. Joseph River, was an ideal place for factories back in the 1800s. Another thing that helped South Bend grow into a town was the railroad. On Saturday, October 4, 1851, the railroad reached South Bend. Many people began to move here in order to start a business. Among them were Clement and Henry Studebaker.



Henry



Clement

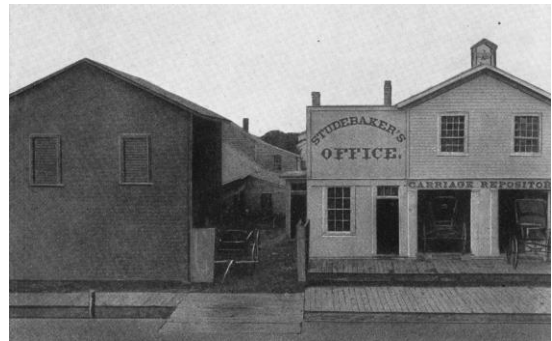
Brothers Clement and Henry Studebaker moved from Ashland, Ohio, to South Bend, Indiana, in 1850. Clement found work as a school teacher and Henry worked as a blacksmith. By 1852, the brothers opened a blacksmith

shop called H. and C. Studebaker on the corner of Jefferson Boulevard and Michigan Street. A bronze plaque marks the spot where the first shop was located.

A blacksmith works with metal. His tools include a forge and bellows, an anvil, a hammer, and tongs. One of a blacksmith's jobs is shoeing horses. H. & C. Studebaker's first customer was a gentleman who needed his horse shod. He was charged 25¢ for the service.

In 1852, people relied on horses and horse drawn vehicles for their transportation needs. The Studebaker brothers also made wagons, and built two wagons that first year. As the company grew, they built a large number of farm wagons. Farm wagons were typically painted red and green, with "STUDEBAKER" in yellow letters on the side of the wagon. This type of wagon is on display at the Museum.

The picture on the right is the Studebaker office and shops around 1855. In 1857, the United States government ordered 100 wagons from the Studebakers. This order helped the Studebaker brothers expand their business.



The Studebaker Family



Clement and Henry Studebaker were the eldest sons of John and Rebecca Studebaker. The Studebaker family came to America in 1736 and settled near Gettysburg, Pennsylvania. John later moved the family to Ashland, Ohio, where he had a blacksmith shop.

The Studebaker brothers came from a large family. There were thirteen children and ten of them lived to be adults - five brothers and five sisters.

In 1858, another brother named John Mohler joined Clement and Henry in the business. John had been living and working in California during the Gold

Rush. He made wheelbarrows and got the nickname “Wheelbarrow Johnny.” When John joined the company, Henry retired to run his farm. The remaining two brothers, Peter and Jacob, joined the company in the 1860s.

Studebaker Brothers Manufacturing Company: Wagons and Buggies

The Studebaker brothers built supply wagons and ambulances for the Union Army during the Civil War. Pictured here is the Studebaker factory in the early 1860s.



Pictured on the left is what South Bend looked like circa 1860.

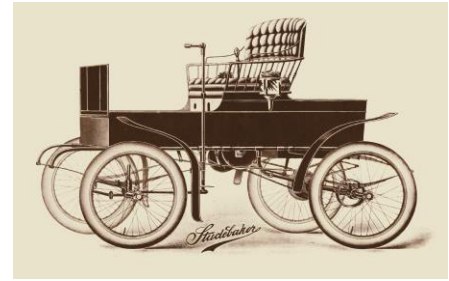
In 1868, the company was renamed the Studebaker Brothers Manufacturing Company. By 1875 the company made its first million dollars, and by 1895 it was the world’s largest wagon producer, making more than 75,000 wagons and buggies a year. The factory buildings covered 98 acres and employed almost 3,000 people.

The Studebaker Brothers Manufacturing Company was the world’s largest wagon producer and was well known across the United States. Peter Studebaker led the company’s sales department, travelling all over the United States promoting Studebaker products and signing up new Studebaker dealers.

Four United States Presidents had Studebaker carriages: Ulysses S. Grant (1873 carriage), Benjamin Harrison (1889 carriage), William McKinley (1896 carriage), and Teddy Roosevelt. Knowing the significance of preservation, Clement Studebaker began growing the company’s collection when he purchased the Lincoln carriage in 1890 after having purchased the Marquis de Lafayette’s carriage three years earlier.

Studebaker Brothers Manufacturing Company: Automobiles

Studebaker introduced its first automobile in 1902. It was powered by electricity since John M. Studebaker preferred electric vehicles to gasoline powered cars. In 1902, Studebaker made 20 electric cars and trucks.



1908 Electric Runabout

In the next ten years, the company produced over 1,800 electric vehicles. The top speed of an electric vehicle was around 13 miles per hour. There are several early 1900s electric cars on display at the Museum.

In the early 1900s, an electric car offered several advantages over a horse. It was less expensive than caring for a horse and always ready when you needed it. Electrics were also more reliable than gasoline powered cars of the day as well as much quieter and easier to operate.

In 1904, Studebaker began producing gasoline-powered automobiles. In 1920, Studebaker stopped building horse drawn vehicles to concentrate exclusively on automobiles. The Studebaker Corporation was the only company to transition from making wagons to cars. Studebaker built many new factory buildings in South Bend during the 1920s, and by 1930 employed over 12,000 people.



1931 Studebaker Six

Studebaker's models in the early 1930s included the President, Commander, Dictator, and the Studebaker Six (pictured on the left).

In 1931, Studebaker introduced a car called the Rockne, named after legendary Notre Dame Football coach Knute Rockne. Coach Rockne worked for Studebaker's Sales Department in addition to coaching football at the University of Notre Dame. Unfortunately, Mr. Rockne died in a plane crash two months before the car was introduced.



Raymond Loewy

The stock market crash of 1929 led to the Great Depression. The Depression crippled the automobile industry, and many smaller manufacturers went out of business. Studebaker was Indiana's only automobile manufacturer to survive the Great Depression.

In 1936, Studebaker hired the Raymond Loewy Associates design firm to head Studebaker's Design Department. Loewy stayed with Studebaker until 1955 and returned again in 1962 to create the Avanti. Many of Studebaker's iconic automobiles were designed by Mr. Loewy and his staff. Some of Studebaker's most famous products include its 1950-1951 "Bullet Nose" models, the 1953 Champion, the Commander Starliner, and the 1963 Avanti.

1950 was Studebaker's record year, with over 400,000 cars and trucks built and nearly 24,000 employees. To the right is a 1950 Studebaker Land Cruiser featuring Studebaker's new bullet-nose design, perhaps one of the company's most famous designs.



1950 Land Cruiser

By the mid-1950s, Studebaker was struggling financially. The Studebaker Corporation was not a small company, but Ford, General Motors, and Chrysler were three of the largest corporations in America. Studebaker did not have the resources to compete on their level.



1959 Lark

In 1959, Studebaker introduced the Lark. The Lark was a "compact" car and had few competitors. It was a rousing success, as Studebaker enjoyed record profits. The next year, however, Ford, General Motors, and Chrysler introduced their own compacts, and Studebaker once again lost money.

The Studebaker Avanti debuted in 1962 and was intended to be Studebaker's "image car", similar to what the Corvette is to Chevrolet, but it was too late. By this time, the Avanti did not—and could not—save Studebaker.



1963 Avanti

In December of 1963, Studebaker closed its South Bend factory. Automobile production continued at the Hamilton, Ontario, Canada factory until March 17, 1966.

Studebaker: Military Production

Studebaker supplied military vehicles for six wars, starting with the Civil War.

The Civil War, Spanish-American War, and World War I were fought primarily with horse drawn equipment. For World War I, Studebaker built supply wagons, ambulances, water carts, and gun carriages. Pictured to the right is a WWI ambulance.



The Weasel

During World War II, Studebaker manufactured military trucks, airplane engines for B17 bombers, and an all-terrain vehicle called the "Weasel" (pictured to the left).

Studebaker built army trucks and jet engines for the Korean War, and trucks for the Vietnam War.

When Studebaker closed the South Bend plant in 1963, its military contracts were taken over by the Kaiser-Jeep Corporation, which would later become AM General.

SECTION II: ACTIVITY SHEETS

The following pages contain student worksheets to use as supplements to the Museum visit and classroom instruction.

This section of the student workbook contains the following activity sheets for students:

1. Activity Sheet A: The Studebaker Brothers
2. Activity Sheet B: Coloring a 1904 Studebaker
3. Activity Sheet C: Transitioning to the Automobile
4. Activity Sheet D: Word Connect
5. Activity Sheet E: Museum Scavenger Hunt

Name _____ Class _____ Date _____

ACTIVITY SHEET A



Above is a photo of the five Studebaker brothers: Henry, Clement, John Mohler, Peter, and Jacob (not in that order). Using the images in the Museum, identify the brothers from left to right.

Name _____ Class _____ Date _____

ACTIVITY SHEET B

BEFORE VISITING THE MUSEUM, describe what you think a 1904 gasoline-powered car might have looked like, including the colors of the paint, wheels, and seats.

WHILE AT THE MUSEUM, find the 1904 Studebaker Model C automobile on the 1st floor gallery. This is the oldest surviving gas-powered Studebaker vehicle. This car sold for \$1,600 at the time, which would be around \$46,000 in 2019.

AFTER YOUR VISIT, describe the colors of the paint, leather seats, and wheels on the Model C. Compare your findings to what you expected from above.

Name _____ Class _____ Date _____

ACTIVITY SHEET C

YOU SHOULD REPLACE THE HORSE WITH STUDEBAKER COMMERCIAL VEHICLES, BECAUSE

- | | |
|---|--|
| 1 Cost less to maintain. Horse maintenance charges continue to increase; "Studebaker" upkeep decreasing. | 12 Quicker deliveries; meeting the demands of the times. |
| 2 Horse a perpetual expense while alive. Must always be fed and groomed, whether at work or idle. | 13 Working hours of a day not limited. |
| 3 Studebaker Electric costs nothing when unemployed. | 14 Requires no time for rest. |
| 4 Cuts down stable space required to less than one-half. | 15 Less hampered and delayed in congested traffic. |
| 5 So compact, can be stabled in smaller quarters, permitting less expensive housing. | 16 Garages inoffensive and can be located in convenient places near distributing centers. No insurance restriction. |
| 6 Requires fewer caretakers. | 17 Always ready when you want them. |
| 7 Needs no attention on days when not in use. | 18 Will work under weather and road conditions when the horse cannot. |
| 8 Lasts longer. | 19 Can be worked overtime without handicapping efficiency. |
| 9 Does the work of at least two horse vehicles, and sometimes three. | 20 Requires less space for loading; saves time in loading and unloading. More can be loaded at same time. |
| 10 Cuts down expense of drivers and wagon boys. | 21 More cleanly and sanitary. |
| 11 Goes there and back while the horse is on the way. | 22 Costs can always be accurately determined and gauged. |
| | 23 Makes possible extension of free delivery limits at a lower cost. |
| | 24 An indication of progressiveness, and a good advertisement. |

What do you think is the best reason for choosing a car over a horse?

Name _____ Class _____ Date _____

ACTIVITY SHEET D

Draw a line connecting words in the first column with words in the second column.

Designer

Clement

Studebaker founder

Raymond Loewy

Image car

Avanti

President

Land Cruiser

Bullet Nose

Weasel

Military vehicle

Benjamin Harrison

Name _____ Class _____ Date _____

ACTIVITY SHEET E

After reading the clues, keep your eyes open for the answers.

1. Name the five Studebaker brothers.
2. How much money did Clem and Henry have when they opened their blacksmith shop?
3. How many of the Presidential Carriages on display were made by Studebaker?
4. When did Studebaker start building cars?
5. How many acres does the Studebaker Proving Ground cover?
6. What 3 products did Studebaker build during World War II?
7. What is a prototype? Find one in the Museum and write down its name.

8. List three South Bend companies (besides Studebaker) that you can learn about in the Museum.
9. What was the name of the union that operated in the Studebaker factories?
10. On what date did Studebaker and Packard merge?
11. When did Studebaker produce its last car?

SECTION III: GLOSSARY

Anvil: A heavy block of iron or steel on which metal may be forged.

Artifact: Anything made by human work or skill.

Assembly Line: An arrangement of industrial equipment and workers in which the product passes from one specialized operation to another until completed.

Automobile: An automobile (via French from Greek *auto*, self and Latin *mobilis* moving, a vehicle that moves itself rather than being moved by another vehicle or animal) or motor car (usually shortened to just car) is a wheeled passenger vehicle that carries its own motor. Most definitions of the term specify that automobiles are designed to run primarily on roads, to have seating for one to eight people, to typically have four wheels, and to be constructed principally for the transport of people rather than goods. There were 590 million passenger cars worldwide (roughly one car for every eleven people) as of 2002.

Blacksmith: One who works iron on an anvil and uses a forge to make horseshoes and other iron products.

Buggy: A lightweight carriage, as in horse and buggy.

Carriage: An inland haulage usually horse-drawn vehicle. It is especially designed for private passenger use and for comfort or elegance, though some are also used to transport goods. It may be light, smart and fast or heavy, large and comfortable.

Census: An official count of a population complete with statistics covering all aspects of life.

City: An urban settlement with a large population of several thousand or larger.

Conestoga wagon:	A type of covered wagon used by American pioneers for westward travel.
Electric cars:	The electric car, EV, or simply electric vehicle is a battery electric vehicle (BEV) that utilizes chemical energy stored in rechargeable battery packs. Electric vehicles use electric motors and motor controllers instead of internal combustion engines (ICEs). Vehicles using both electric motors and ICEs are examples of hybrid vehicles, and are not considered pure BEVs because they operate in a charge-sustaining mode.
Factory:	A business for the manufacture or assembly of goods.
Forge:	To heat metal and work into a shape. A fire pit that heats metal to working temperature.
Industrial Revolution:	A name for the great changes brought about by factories in the 19 th century.
Industry:	Any specific branch of production or manufacture.
Labor:	Physical or manual work done for hire.
Manufacture:	To make or process a product on a large scale.
Product:	Anything produced through labor.
Prototype:	An original model on which later cars are to be based.
Town:	A community of people ranging from a few hundred to several thousand. Usually a "town" is thought of as larger than a village but smaller than a city.
Truck:	A vehicle usually used for transporting bulk goods, materials, or equipment. The word "truck" comes from the Greek " <i>troches</i> ", meaning "wheel."
Village:	A clustered human settlement or community with fixed buildings, generally located in rural areas and smaller than a town.

Wagon:	A heavy four-wheeled vehicle pulled by animals such as horses, mules or oxen, and used for transportation of people or goods. Wagons are distinguished from carts (which have two wheels), and from lighter four-wheeled vehicles such as carriages. A wagon may be pulled by one animal or by several, often in pairs.
Wheelbarrow:	A small hand-propelled vehicle, usually with just one wheel, designed to be pushed and guided by a single person using two handles to the rear.
Wheelwright:	One who makes or repairs wheels.