

## Background Information

**Did you know that a scientist and an engineer invented a way to make car parts out of plants? Not using roots and stems and leaves. Instead they worked with the oil and protein from the seed.**

**George Washington Carver** is a famous American scientist who began his research in his own backyard. He experimented with peanuts, cotton, soybeans and dozens of other plants. In 1904 George Washington Carver discovered that soybeans were a valuable source of protein and oil that could be used to make industrial products as well as food.

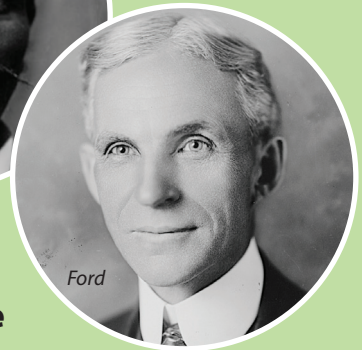
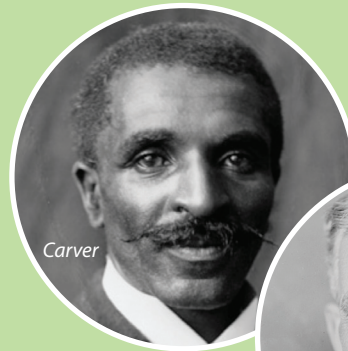
**Henry Ford** is a recognized industrialist and founder of the Ford Motor Company who is known for inventing the assembly line and for his famous automobile, the Model T Ford.

George Washington Carver shared his scientific discoveries with his good friend Henry Ford. Mr. Ford owned a large research facility. He came to the lab one day with a huge bag of soybeans. Dumping them out on the floor, he told a team of young scientists,

***"You guys are supposed to be smart. You ought to be able to do something with these soybeans."***

In time, Carver and the team of scientists in Ford's lab made a strong enough plastic for the gearshift knobs, horn buttons, window frames, accelerator pedals, light-switch assemblies and ignition-coil casings. They also fashioned the exterior of an automobile from "soybean plastic." It was the protein from the soybeans that under heat was made into the hard plastic parts for Ford's cars. By 1935 Mr. Ford was using one bushel of beans for every car he manufactured.

(60 pounds = 1 bushel)



### What was the science behind the work of the two friends?

Biology and chemistry help explain the problems that Carver and Ford and the young scientists were trying to solve while they were working with the soybeans. George Washington Carver and Henry Ford experimented with heating the protein in soybeans to produce a biobased material, soy protein plastic, that was strong enough to be used to make car parts.



The 4-H Name and Emblem is protected under 18 USC 707.

Support for this resource was provided by:



**PIONEER**  
A DUPONT BUSINESS



No endorsement of a commercial entity or its products or services is intended or implied.

