

A Brief History of Rubber

Research Worksheet

Instructions: Answer the prompts below on a separate sheet of paper. As you complete your research, be sure to collect appropriate information. You will need to find dates and locations, as well as key details about each specific topic.

1. Identify Charles Goodyear, his discovery and its significance.

December 28, 1800 – July 1, 1860. Discovered the process of vulcanization- a process which stabilizes rubber and allows it to be used in widespread applications- in 1839 and patented the process in 1844.

2. Describe the earliest known use of rubber for sport.

Mesoamericans used rubber balls for sport. Ball courts dating to 1600 BC have been discovered. Little is known about the rules of these games, but it seems the games incorporated aspects of soccer, volleyball, racquetball, etc. Early peoples also used rubber to make something like shoes, and to aid in waterproofing clothes.

3. Highlight key points in the development of the pneumatic tire.

Some highlights can be found on the following links:

<http://en.wikipedia.org/wiki/Tire>

<http://inventors.about.com/library/inventors/bltires.htm>

<http://www.ideafinder.com/history/inventions/pneumatictire.htm>

4. Identify King Leopold II and describe his involvement with rubber.

King of Belgium, he maneuvers to take personal control over the Congo region in central Africa in the last half of the 19th century. Some of the worst atrocities committed against the people of Africa are carried out under his administration. Among other notable details, he exploited the region for its rubber and became very wealthy as a result.

5. Who is Karl Benz, and what did he do that is significant with respect to the rubber industry?

German, regarded as the inventor of the automobile. Contemporaries worked on similar ideas, he is credited due to obtaining the first patent. Patent for his first engine was granted in 1879 and for his first automobile in 1886. The development of cars led to the increased need for tires, which in turn led to an increased need for rubber.

6. Identify the Roxbury India Rubber Company and its significance.

This was the first US rubber company, founded in 1828 by E.M. Chaffee. Charles Goodyear's passion for rubber was supposedly ignited after encountering products made by this company.

7. What was Fordlandia?

In the 1920's, Henry Ford decided to start a rubber plantation in Brazil so as to avoid having to import rubber from Asia, the primary rubber-producing area of the world at the time. Fordlandia became this plantation, modeled after typical Michigan towns. Leaf blight and other problems forced this plantation to be abandoned.

8. Who was Joseph Priestly, and why is he associated with rubber?

In 1770 Joseph Priestly, a scientist famous for discovering oxygen, coined the term "rubber" after

noting that it could erase pencil marks by rubbing the material over them.

9. Identify Thomas Hancock.

From England, invented the “Pickling machine,” or masticator as it is called today, in 1820.

Considered to be the founder of the British rubber industry, he would go on to be a contemporary rival of Charles Goodyear.

10. Briefly describe the Putumayo atrocities.

Putumayo is a region in South America near the Amazon basin. The Putumayo atrocities became known after the Blue Book was published in 1912, detailing the horrible treatment of natives forced to gather rubber in the area. In addition to physical torture and imposed brutality, a type of “loan slavery” was practiced, effectively keeping employees enslaved by their debt under the “peonage” system. (Under this system, employees were forced to buy all of their supplies from the employer's store, effectively keeping the employee enslaved to debt and legally bound to remain employed until the debt is paid.)

11. Briefly describe the development of synthetic rubber and its relationship to World War II.

As the world found itself immersed in war, demand for rubber increased as countries were pouring resources into the war effort, and rubber supplies declined as countries suddenly found themselves cut off from their traditional sources of rubber. The development and production of a synthetic rubber was the answer to this dilemma. Plants producing synthetic rubber began being built in the mid-1940s, primarily in North America, Europe and Japan. Synthetic rubber production first surpassed natural rubber in 1959-1960 (varying reports). Currently, synthetic rubber production makes up approximately 60% of all rubber produced worldwide. It should be noted that work on synthetic (and non-traditional sources of) rubber began even before World War I, but such work was never done on such a scale as it was during and after World War II.

12. List other uses for rubber, both in the past and in the present. As applicable, indicate when and where they were developed. Consider the following uses: Military, automobile, medical, sport and leisure, clothing, etc.

Various answers.