

8th Science Assignment 4/13-4/27 **DUE FRIDAY 4/27**

We will be learning about Natural Resources vs. Synthetic Resources. There are 2 assignments. Both are due at the end of *NEXT WEEK*.

Review Questions:

1. What does synthetic mean?
2. Is something from a natural source BETTER than something from a synthetic source? Why do you think that?

** OPTIONAL LAB ACTIVITY - Making Plastic - If students would like to do it, only requires milk and vinegar- see google link:

<https://docs.google.com/document/d/1Sg0x7bd1GGsJlg8uFEuGSeJIWi2QJsvNiMDU9Fulya0/e/dit?usp=sharing>

Assignment #1

- Find 5 items in or around your house (cars too) that are made from NATURAL RESOURCES- *you must include what the natural resource is (ie: cork board for holding pictures - source is cork; wooden dining room chairs- source is wood
- What is each of the 5 used for?
- Find 5 items in or around your house (cars too) that are made from SYNTHETIC RESOURCES- * you must include what the synthetic material is - *you can look up what the item is typically made of*
- What is each of the 5 items used for?
- Read the following:

Man and Materials through History

Human history is shaped by the materials we develop and use. Ancient cultures began their existence making use of stone, soil, plants and bones as their resources for making tools. The only metals available were gold and copper. This period is known as the Stone Age. However some 5,000 years ago, humans learned how to turn copper and tin ore into bronze, and the Stone Age became the Bronze Age. Nearly two thousand years later, humans learned to turn iron oxide into iron and steel and the Bronze Age became the Iron Age. Today, we do more than mix and modify natural materials to improve them. We create entirely new materials by manipulating the structure of chemicals. This era was started in 1907 by an inventor of the first synthetic plastic, Bakelite.

Early Modern period, when trade and technology reached new levels of complexity. The Industrial Revolution began around 1760 and marked the introduction of a new period of scientific and technological breakthroughs, including the development of steam power, factory manufacturing and the use of iron and cement as building materials. More recent milestones include the development of synthetic plastics around 1900 and the identification of the first synthetic nanomaterial, the carbon fullerene, in 1985. As these new materials have been developed, they've made new products and technologies such as computers, spacecraft and

robotics possible. The growth of materials science and introduction of new materials in each age of history has made technological advances and new cultural practices possible.

We now live in The Polymer Age, also called the age of plastics. Plastic is the popular term for a variety of synthetic, or man-made, polymers. Polymers are very large molecules—giants in the molecular world—comprised of smaller molecules. Thousands of polymers exist in nature. Celluloid is a plastic made from a natural polymer, cellulose. Completely synthetic polymers are created entirely from chemicals.

Based on the information from: American Chemical Society | National Historic Chemical Landmarks Discover more stories and activities about chemistry's history at www.acs.org/landmarks.

Buttons made from Bakelite. Courtesy Gregory Tobias/Chemical Heritage Foundation.

Assignment #2- Google Slide Show Presentation of Synthetic Materials

- Slideshow Guideline:
https://docs.google.com/document/d/13amEs_eDwqGWCvnLbWM-3W5BBggK9K0zejd!WPtASi8/edit?usp=sharing
- Synthetic Material Research sites- there are more, but these should do the trick:
<https://drive.google.com/file/d/0BypmAzV8oya-c2dOYmEzSDRBeU0/view?usp=sharing>

YOU MAY SUBMIT THE FIRST ASSIGNMENT PRIOR TO NEXT WEEK. TRY TO MANAGE YOUR TIME, DON'T SAVE EVERYTHING FOR NEXT WEEK. IF YOU HAVE TROUBLE FINDING THE MATERIALS REQUESTED IN ASSIGNMENT #1, THAT'S OK! JUST TRY YOUR BEST!