

Boy Scouts Engineering Merit Badge 2017

Homework Due: *April 22nd*

Complete the following four (4) activities and be prepared to share what you learned with your counselors and classmates on April 22nd.

1. Select a manufactured item in your home (such as a toy or an appliance) and investigate how and why it works as it does. Find out what sort of engineering activities and occupations were needed to create it. Write a paragraph of what you learned and how you got the information, and discuss with your counselors.
2. Select an engineering achievement that has had a major impact on society. Using resources such as the Internet (with your parent's permission), books, and magazines, find out about the engineers who made this engineering feat possible, the special obstacles they had to overcome, and how this achievement has influenced the world today. Write a paragraph of what you learned and how you got the information, and discuss with your counselors.
3. Read about the Systems Engineering approach from this link (<http://www.incose.org/AboutSE/WhatIsSE>) and think about how you can use this approach to help plan projects and activities. We'll apply this approach in the next lesson. There is also a diagram at the end of the homework that gives a nice visual. Also, similar to the scout oath and scout law, engineers have their own code of ethics which can be read about here (<https://www.nspe.org/resources/ethics/code-ethics>). Write down 4 comparisons between the scout oath and law and the engineering code of ethics.
4. Choose one of the following activities to complete:
 - a. Make a list of 10 electrical appliances in your home. Find out approximately how much electricity each uses in one month. Learn how to find out the amount and cost of electricity used in your home during periods of light and heavy use. List five ways to conserve electricity.
 - b. Using an electronic device such as a mobile telephone or portable digital media player, find out how sound travels from one location to another. Explain how the device was designed for ease of use, function, and durability.

