

## **BOY SCOUT NOVA AWARD - WHOOSH! (ENGINEERING)**

Additional requirement sheets and helps are available from [ScouterMom.com](http://ScouterMom.com).

This module is designed to help you explore how engineering affects your life each day.

1. Choose A or B or C and complete ALL the requirements.

1A. Watch about three hours total of engineering-related shows or documentaries that involve motion or motion-inspired technology. Then do the following:

1A-1. Make a list of at least five questions or ideas from the show(s) you watched.

1A-2. Discuss two of the questions or ideas with your counselor.

1B. Read (about three hours total) about motion or motion-inspired technology. Then do the following:

1B-1. Make a list of at least two questions or ideas from each article.

1B-2. Discuss two of the questions or ideas with your counselor.

1C. Do a combination of reading and watching (about three hours total). Then do the following:

1C-1. Make a list of at least two questions or ideas from each article or show.

1C-2. Discuss two of the questions or ideas with your counselor.

2. Choose ONE merit badge from the following list. (Choose one you have not already used for another Nova award.) After completion, discuss with your counselor how the merit badge you earned uses engineering.

2A. Archery

2B. Aviation

2C. Composite Materials

2D. Drafting

2E. Electronics

2F. Engineering

2G. Inventing

2H. Mining in Society

2I. Model Design and Building

2J. Railroading

2K. Rifle Shooting

2L. Robotics

2M. Shotgun Shooting

3. Do ALL of the following:

3A. Make a list or drawing of the six simple machines.

3B. Be able to tell your counselor the name of each machine and how each machine works.

3C. Discuss the following with your counselor:

3C-1. The simple machines that were involved with the motion in your chosen merit badge (Hint: Look at the moving parts of an engine to find simple machines.)

3C-2. The energy source causing the motion for the subject of your merit badge

3C-3. What you learned about motion from earning your merit badge

4. Choose A or B and complete ALL the requirements.

4A. Visit an amusement park. Then discuss the following with your counselor:

4A-1. The simple machines present in at least two of the rides

4A-2. The forces involved in the motion of any two rides

4B. Visit a playground. Then discuss the following with your counselor:

4B-1. The simple machines present in the playground equipment

4B-2. The forces involved in the motion of any two playground fixtures

5. Do the following:

5A. On your own, design one of the following and include a drawing or sketch: an amusement park ride OR a playground fixture OR a method of transportation.

5B. Discuss with your counselor:

5B-1. The simple machines present in your design

5B-2. The energy source powering the motion of your creation

6. Discuss with your counselor how engineering affects your everyday life.