Whoosh!

Boy Scout Nova Award Workbook

This workbook can help you but you still need to read the Boy Scout Nova Awards Guidebook.

The work space provided for each requirement should be used by the Scout to make notes for discussing the item with his counselor, not for providing the full and complete answers. Each Scout must do each requirement.

No one may add or subtract from the official requirements found in the Boy Scout Nova Awards Guidebook (Pub. 34033 – SKU 614936).

The requirements were issued in 2012 • This workbook was updated in February 2015.

Scout's Name:_____ Unit: _____

Counselor's Name: _____ Counselor's Phone No.: _____

http://www.USScouts.Org • http://www.MeritBadge.Org

Please submit errors, omissions, comments or suggestions about this **workbook** to: **Workbooks@USScouts.Org**

Send comments or suggestions for changes to the **requirements** for the **Nova Award** to: **Program.Content@Scouting.Org**

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.

☐ A. Watch about three hours total of engineering -related shows or documentaries that involve motion or motion-inspired technology.

Some examples include—but are not limited to—shows found on PBS ("NOVA"), Discovery Channel, Science Channel, National Geographic Channel, TED Talks (online videos), and the History Channel. You may choose to watch a live performance or movie at a planetarium or science museum instead of watching a media production. You may watch online productions with your counselor's approval and under your parent's supervision.

What was watched?	Date	Start Time	Duration

Then do the following:

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

1.

2.

3.

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4.

5.

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

1.

2.

☐ B. Read (about three hours total) about motion or motion-inspired technology.

What was read?	Date	Start Time	Duration

Examples of magazines include—but are not limited to—*Odyssey, Popular Mechanics, Popular Science, Science Illustrated, Discover, Air & Space, Popular Astronomy, Astronomy, Science News, Sky & Telescope, Natural History, Robot, Servo, Nuts and Volts,* and *Scientific American*.

Then do the following:

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

1.	
2.	

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

1.	
2.	

☐ C Do a combination of reading and watching (about three hours total).

What was watched or read?	Date	Start Time	Duration

Then do the following:

1. Make a list of at least two questions or ideas from each article or show..
   1.
   2.
2. Discuss two of the questions or ideas with your counselor.
   1.

2.

2. Complete ONE merit badge from the following list. (Choose one that you have not already used toward another Nova award.)

- ☐ Archery
- ☐ Aviation
- ☐ Composite Materials
- ☐ Drafting
- ☐ Electronics
- ☐ Engineering
- ☐ Inventing
- ☐ Model Design and Building
- ☐ Railroading
- ☐ Rifle Shooting
- ☐ Robotics
- ☐ Shotgun Shooting

After completion, discuss with your counselor how the merit badge you earned uses engineering.

3. Do ALL of the following.

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

1.

2.

3.

4.

5.

6.

Helpful Link

"Six Simple Machines": ConstructionKnowledge.net Websitehttp://www.constructlonknowledgesnet/general_technical_knowledge/general_tech_basic_six_simple machines.php

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

	Name	How it works
1.		
2.		
3.		
4.		
5.		
6.		

C. Discuss the following with your counselor:

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.)

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

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

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

☐ A. Visit an amusement park.

Then discuss the following with your counselor:

☐ 1. The simple machines present in at least two of the rides

1.

2.

☐ 2. The forces involved in the motion of any two rides

1.

2.

☐ B. Visit a playground.

Then discuss the following with your counselor:

1. The simple machines present in the playground equipment

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

1.

2.

5. Do the following:

☐ A. 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.

☐ B. Discuss with your counselor:

☐ 1. The simple machines present in your design

☐ 2. The energy source powering the motion of your creation

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

Attachment – (NOTE: It is not necessary to print this page.)

Important excerpts from the *'Guide To Advancement'*, No. 33088:

Effective January 1, 2012, the *'Guide to Advancement'* (which replaced the publication *'Advancement Committee Policies and Procedures'*) is now the *official* Boy Scouts of America source on advancement policies and procedures.

- **[Inside front cover, and 5.0.1.4] — Unauthorized Changes to Advancement Program**

  No council, committee, district, unit, or individual has the authority to add to, or subtract from, advancement requirements. (There are limited exceptions relating only to youth members with disabilities. For details see section 10, "Advancement for Members With Special Needs".)

- **[Inside front cover, and 7.0.1.1] — The *'Guide to Safe Scouting'* Applies**

  Policies and procedures outlined in the *'Guide to Safe Scouting',* No. 34416, apply to all BSA activities, including those related to advancement and Eagle Scout service projects. [Note: Always reference the online version, which is updated quarterly.]

- **[7.0.3.1] — The Buddy System and Certifying Completion**

  Youth members must not meet one-on-one with adults. Sessions with counselors must take place where others can view the interaction, or the Scout must have a buddy: a friend, parent, guardian, brother, sister, or other relative —or better yet, another Scout working on the same badge— along with him attending the session. When the Scout meets with the counselor, he should bring any required projects. If these cannot be transported, he should present evidence, such as photographs or adult certification. His unit leader, for example, might state that a satisfactory bridge or tower has been built for the Pioneering merit badge, or that meals were prepared for Cooking. If there are questions that requirements were met, a counselor may confirm with adults involved. Once satisfied, the counselor signs the blue card using the date upon which the Scout completed the requirements, or in the case of partials, initials the individual requirements passed.

- **[7.0.3.2] — Group Instruction**

  It is acceptable—and sometimes desirable—for merit badges to be taught in group settings. This often occurs at camp and merit badge midways or similar events. Interactive group discussions can support learning. The method can also be attractive to "guest experts" assisting registered and approved counselors. Slide shows, skits, demonstrations, panels, and various other techniques can also be employed, but as any teacher can attest, not everyone will learn all the material.

  There must be attention to each individual's projects and his fulfillment of *all* requirements. We must know that every Scout —actually and *personally*— completed them. If, for example, a requirement uses words like "show," "demonstrate," or "discuss," then every Scout must do that. It is unacceptable to award badges on the basis of sitting in classrooms *watching* demonstrations, or remaining silent during discussions. Because of the importance of individual attention in the merit badge plan, group instruction should be limited to those scenarios where the benefits are compelling.