



# Whoosh!



## Boy Scout Nova Award Workbook

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

This Workbook can help you organize your thoughts as you prepare to meet with your counselor.

You still must satisfy your counselor that you can demonstrate each skill and have learned the information.

You should use the work space provided for each requirement to keep track of which requirements have been completed, and to make notes for discussing the item with your counselor, not for providing full and complete answers.

If a requirement says that you must take an action using words such as "discuss", "show", "tell", "explain", "demonstrate", "identify", etc, that is what you must do.

**Counselors may not require the use of this or any similar workbooks.**

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 revised in 2015 • This workbook was updated in January 2018.

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](mailto:Workbooks@USScouts.Org)

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

What was watched?	Date	Start Time	Duration

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. One example is the NOVA Lever an Obelisk page on ancient Egypt and the use of levers, available at <http://www.pbs.org/wqbh/nova/egypt/raising/lever.html>.

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Then do the following:

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

1.	
2.	
3.	
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. Choose ONE merit badge from the following list. (Choose one that you have not already used toward another Nova award.)

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Archery             | <input type="checkbox"/> Engineering               | <input type="checkbox"/> Rifle Shooting   |
| <input type="checkbox"/> Aviation            | <input type="checkbox"/> Inventing                 | <input type="checkbox"/> Robotics         |
| <input type="checkbox"/> Composite Materials | <input type="checkbox"/> Mining in Society         | <input type="checkbox"/> Shotgun Shooting |
| <input type="checkbox"/> Drafting            | <input type="checkbox"/> Model Design and Building |   |
| <input type="checkbox"/> Electronics         | <input type="checkbox"/> Railroadng                |   |

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  
 Website:  
[http://www.constructionknowledge.net/general\\_technical\\_knowledge/general\\_tech\\_basic\\_six\\_simple\\_machines.php](http://www.constructionknowledge.net/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






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.


**When working on Nova and Supernova awards, Scouts and Scouters should be aware of some vital information in the current edition of the *Guide to Advancement* (BSA publication 33088). Important excerpts from that publication can be downloaded from <http://usscouts.org/advance/docs/GTA-Excerpts-nova.pdf>. You can download a complete copy of the *Guide to Advancement* from <http://www.scouting.org/filestore/pdf/33088.pdf>.**