



Start Your Engines

Scouts BSA Nova Award Workbook



This workbook can help you but you still need to read the Scouts BSA 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 at <https://www.scouting.org/stem-nova-awards/awards/>
 The requirements were revised in 2020 • This workbook was updated in December 2020.

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 technology affects your life each day.

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

- A. Watch about three hours total of technology -related shows or documentaries that involve transportation or transportation 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 or guardian's supervision.

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Then do the following:

1. Make a list of at least two questions or ideas from each show you watched.

1.	
2.	
3.	
4.	
5.	
6.	
7.	

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

1.	
2.	

- c B. Read (about three hours total) about transportation or transportation technology

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.*

What was read?	Date	Start Time	Duration

Then do the following:

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

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

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.	
3.	
4.	
5.	

6.

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.)

- | | | |
|---|--|---|
| <input type="checkbox"/> Automotive Maintenance | <input type="checkbox"/> Energy | <input type="checkbox"/> Railroading |
| <input type="checkbox"/> Aviation | <input type="checkbox"/> Farm Mechanics | <input type="checkbox"/> Small-Boat Sailing |
| <input type="checkbox"/> Canoeing | <input type="checkbox"/> Kayaking | <input type="checkbox"/> Space Exploration |
| <input type="checkbox"/> Cycling | <input type="checkbox"/> Motorboating | <input type="checkbox"/> Truck Transportation |
| <input type="checkbox"/> Drafting | <input type="checkbox"/> Nuclear Science | |
| <input type="checkbox"/> Electricity | <input type="checkbox"/> Programming | |

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

3. Do ALL of the following.

- A. Using the requirements from the above list of merit badges.
 - 1. Tell your counselor the energy source(s) used in these merit badges

- 2. Discuss the pros and cons of each energy source with your counselor

- c B. Make a list of sources of energy that may be possible to use in transportation.

- c C. With your counselor:

- 1. Discuss alternative sources of energy.

- 2. Discuss the pros and cons of using alternative energy sources

- 4. Design and build a working model vehicle (not from a kit).

- c A. Make drawings and specifications of your model vehicle before you begin to build.

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- B. Include one of the following energy sources to power your vehicle (do not use gasoline or other combustible fuel source): solar power, wind power, or battery power.
 - Solar Power
 - Wind Power
 - Battery Power
- C. Test your model. Then answer the following questions:
 1. How well did it perform?

2. Did it move as well as you thought it would?

3. Did you encounter problems? How can these problems be corrected?

C D. Discuss with your counselor:

1. Any difficulties you encountered in designing and building your model

2. Why you chose a particular energy source

3. Whether your model met your specifications

4. How you would modify your design to make it better

6. Discuss with your counselor how technology 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>.