



Start Your Engines!

Nova Award Workbook

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 Boy Scout Requirements (Pub. 33216 – SKU 34765).

The requirements were last issued or revised in 2012 • This workbook was updated in February 2013.

Scout's Name: _____ Unit: _____

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

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 involves transportation or transportation technology. Then do the following:

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

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

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

Then do the following:

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

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

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

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

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

- Automotive Maintenance _____ Aviation _____ Canoeing _____ Cycling _____
- Drafting _____ Electricity _____ Energy _____ Farm Mechanics _____
- Motorboating _____ Nuclear Science _____ Railroading _____
- Small-boat Sailing _____ Space Exploration _____ Truck Transportation _____

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.

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

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).

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

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.

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?

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

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

Requirement resources can be found here:
http://meritbadge.org/wiki/index.php/NOVA_Awards#Whoosh.21

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.

- [7.0.3.3] — **Partial Completions**
Scouts need not pass all requirements with one counselor. The Application for Merit Badge has a place to record what has been finished — a "partial." In the center section on the reverse of the blue card, the counselor initials for each requirement passed. In the case of a partial completion, he or she does not retain the counselor's portion of the card. A subsequent counselor may choose not to accept partial work, but this should be rare. A Scout, if he believes he is being treated unfairly, may work with his Scoutmaster to find another counselor. An example for the use of a signed partial would be to take it to camp as proof of prerequisites. Partials have no expiration except the 18th birthday.