



Next Big Thing

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 in the Scouts BSA Nova Awards Guidebook (Pub. 34033 – SKU 614936). The requirements were issued in 2019 • This workbook was updated in June 2019.

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 award explores the world of product design, which involves balancing time, cost, and quality to create something new, usually a product that will be sold to consumers or other businesses.

- c 1 Choose A or B or C and complete ALL the requirements.
- c A Watch not less than three hours total of shows or documentaries that involve the creation of new products. This can include entrepreneurship, innovation, new technology, and/or engineering design.

What was watched?	Date	Start Time	Duration

Then do the following:

- c 1. Make a list of at least five questions or ideas from the shows you watched.

1.	
2.	
3.	
4.	
5.	

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- C Do a combination of reading and watching, not less than three hours total.

What was read or watched?	Date	Start Time	Duration

Then do the following:

- 1 Make a list of at least five questions or ideas from the articles you read or the shows you watched.

1.	
2.	
3.	
4.	
5.	

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

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

- American Business Digital Technology Engineering
- Architecture Drafting Inventing
- Composite Materials Electronics Model Design and Building

Discuss with your counselor how the merit badge you earned relates to product design.

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- 3 Explore different concepts in computer programming. Discuss these programming concepts with your counselor:
 - A Explore product innovation
 - Examine one product and at least two different versions of that product.
 - Create a list of the differences between the designs.

Product A	Product B

- Discuss with your counselor the differences and what you think each difference is trying to solve.

- B Research prototyping methods
- Find and explain the differences between a “works-like” and “looks-like” prototype.

- Learn the reasons and applications where one method would be chosen over the other.

- Research different ways and costs of having a product professionally prototyped.

- Explore the reasons why one method would be chosen over another.

- Discuss and explain your findings with your counselor

- **C Market research**

Research and understand the terms: market size, business plan, value proposition, elevator pitch, cost-effective design, and ethnographic research - specifically in reference to product design.

market size

business plan

value proposition

elevator pitch

cost-effective design

ethnographic research

- Discuss with your counselor what these terms mean and why they are important for a product designer to understand, and how they affect the design of a product.

- D. Practice brainstorming
- Examine different brainstorming methods.

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- Choose a product you have used or a situation you have experienced. _____
- Using one method you found, brainstorm various ways to improve the product or situation. You do not have to brainstorm designs, just ways to improve the design.

- Present your list to your counselor and discuss.

- E. Learn about and practice "Painstorming"
- Research "painstorming": what it is and how it is done?

Choose a product you have used or a situation you have experienced and "painstorm" for at least 15 minutes. Do not think of designs to solve the pains, just list as many pains as you can.

- Present your list of pains to your counselor and discuss.

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○ F. Inventors

- Choose a historical or modern inventor who interests you, and research them and their inventions. If possible, learn about the iterations their product went through before it became successful.

Inventor:

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- Discuss with your counselor the researcher and their inventions, as well as why you chose that person.

○ 4 Product Design

Do ALL of the following requirements.

- A Using either "painstorming" or brainstorming, design a new product.

- Create a 3D model of your design with modeling software or sketch your design. Some common CAD programs with free student versions include Autodesk Inventor, Catia, CREO, Google SketchUp, and Solid Works.

- B Discuss your design and reasons for your choices with your counselor.

Explain your 3D model or sketches, and what your next steps would be to make the product a reality.

- 5 Do ALL of the following requirements.
 - A Visit a company/school/institution where new products are being developed.
Where did you visit? _____
 - B. Talk to someone there about how they use product design in their work. Prepare at least five questions to ask the person you talk to, and discuss their answers with your counselor.

1.	
2.	
3.	
4.	
5.	

- C. Discuss with your counselor how products are being designed at the destination you visited.

- 6 Reflect on your experiences during the completion of these requirements with your counselor. Discuss with your counselor how product design affects your everyday life, and what you have learned while working on this Nova.

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>.