



# Inventing

## Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet.

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 2010 • This workbook was updated in March 2012.

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 improving this workbook to: [Workbooks@USScouts.org](mailto:Workbooks@USScouts.org)

1. In your own words, define inventing. Then do the following: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

a. Explain to your merit badge counselor the role of inventors and their inventions in the economic development of the United States. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. List three inventions and how they have helped humankind.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

2. Do ONE of the following:

a. Identify and interview with a buddy (and with your parent's permission and merit badge counselor's approval) an individual in your community who has invented a useful item. Report what you learned to your counselor. \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. Read about three inventors.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Select the one you find most interesting and tell your counselor what you learned. \_\_\_\_\_

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3. Do EACH of the following:

a. Define the term intellectual property. \_\_\_\_\_

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Explain which government agency oversees the protection of intellectual property, the types of intellectual property that can be protected, how such property is protected, and why protection is necessary.

Which government agency: \_\_\_\_\_

The types of intellectual property that can be protected: \_\_\_\_\_

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How such property is protected: \_\_\_\_\_

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Why protection is necessary: \_\_\_\_\_

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b. Explain the components of a patent and the different types of patents available.

Components:

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Types of patents available:

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c. Examine your Scouting gear and find a patent number on a camp item you have used. \_\_\_\_\_

With your parent's permission, use the Internet to find out more about that patent. \_\_\_\_\_

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Compare the finished item with the claims and drawings in the patent. Report what you learned to your counselor. \_\_\_\_\_

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d. Explain the term patent infringement. \_\_\_\_\_

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4. Discuss with your counselor the types of inventions that are appropriate to share with others without protecting and explain why. \_\_\_\_\_

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Tell your counselor about one nonpatented or noncopyrighted invention and its impact on society. \_\_\_\_\_

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5. Choose a commercially available product that you have used on an overnight camping trip with your troop. \_\_\_\_\_

Make recommendations for improving the product, make a sketch that shows your recommendations, and discuss your recommendations with your counselor.

Recommendations: \_\_\_\_\_

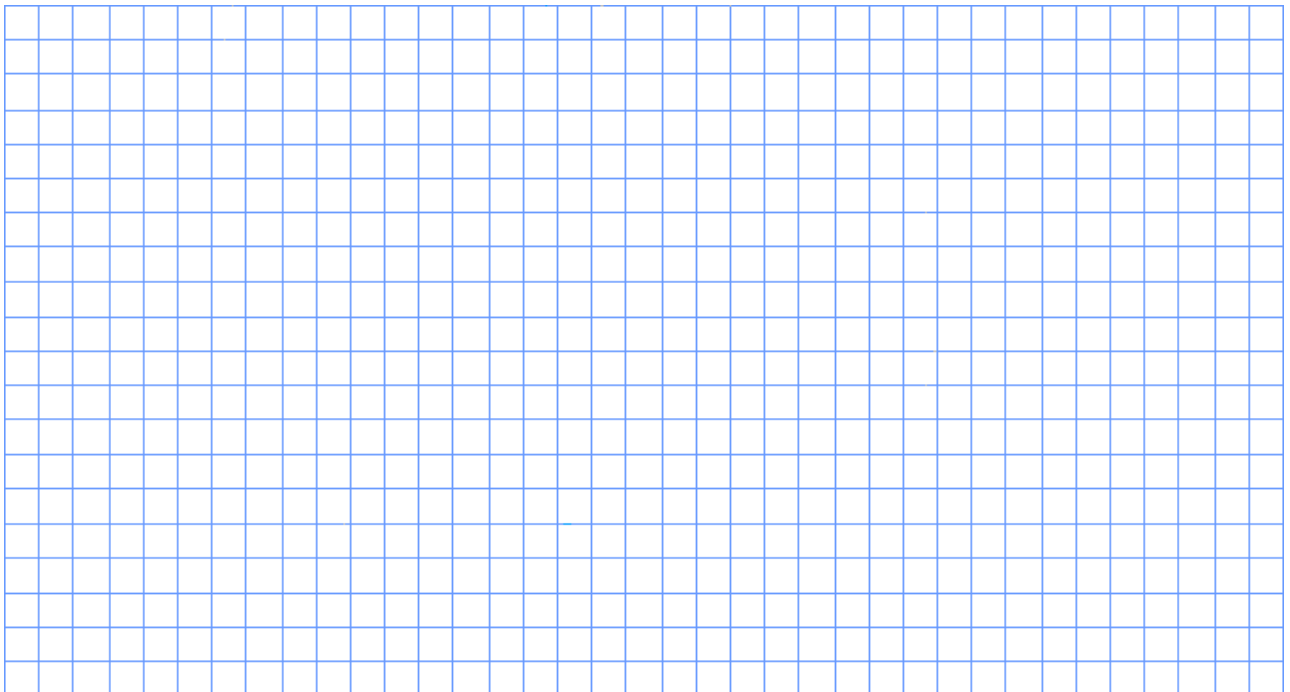
\_\_\_\_\_

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\_\_\_\_\_

Make a sketch:



Discuss your recommendations: \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

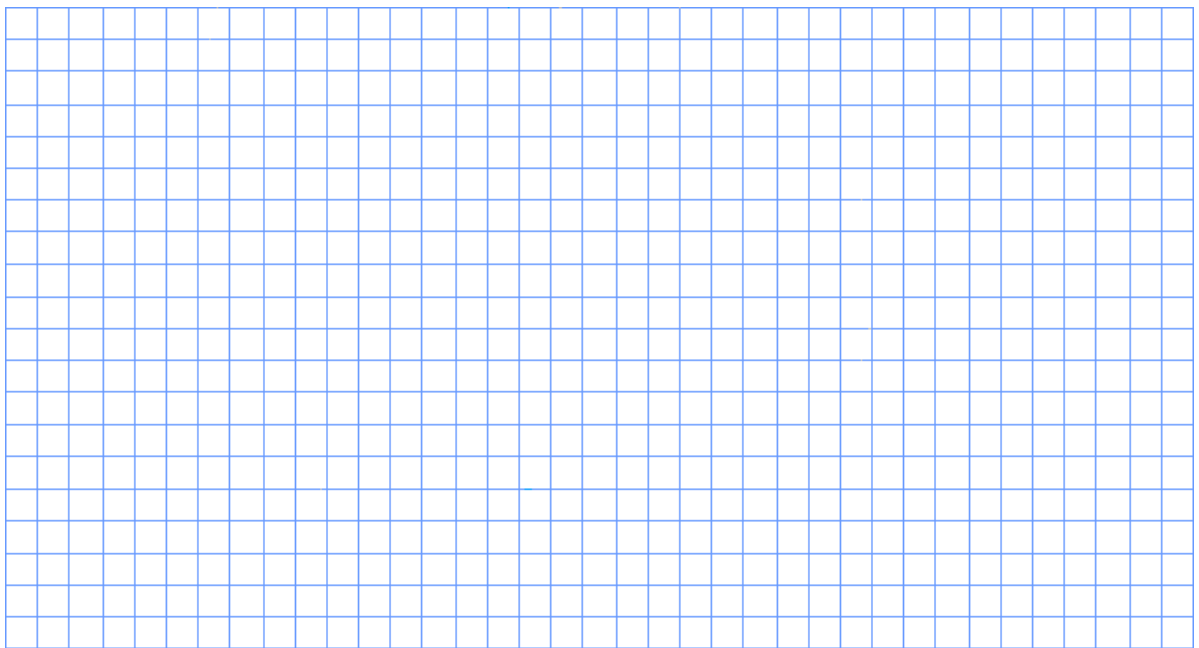
- 6. Think of an item you would like to invent that would solve a problem for your family, troop, chartered organization, community, or a special-interest group. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Then do EACH of the following, while keeping a notebook to record your progress:

- a. Talk to potential users of your invention and determine their needs. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Then, based on what you have learned, write a proposal about the invention and how it would help solve a problem. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

This proposal should include a detailed sketch of the invention.



- b. Create a model of the item using clay, cardboard, or any other readily available material. \_\_\_\_\_  
List the materials necessary to build a prototype of the item. \_\_\_\_\_  
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- c. Share the idea and model with your counselor and potential users of your invention. Record their feedback in your notebook.

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- 7. Build a working prototype of the item you invented for requirement 6\*, then test and evaluate the invention. Among the aspects to consider in your evaluation are cost, usefulness, marketability, appearance, and function.

Cost: \_\_\_\_\_

Usefulness: \_\_\_\_\_

Marketability: \_\_\_\_\_

Appearance: \_\_\_\_\_

Function: \_\_\_\_\_

Describe how your initial vision and expectations for your idea and the final product are similar or dissimilar. Have your counselor evaluate and critique your prototype. \_\_\_\_\_

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\*Before you begin building the prototype, you must share your design and building plans with your counselor and have your counselor's approval

8. Do ONE of the following:

a. Participate in an invention, science, engineering, or robotics club or team that builds a useful item. Share your experience with your counselor. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. Visit a museum or exhibit dedicated to an inventor or invention, and create a presentation of your visit to share with a group such as your troop or patrol. \_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

9. Discuss with your counselor the diverse skills, education, training, and experience it takes to be an inventor. \_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

Discuss how you can prepare yourself to be creative and inventive to solve problems at home, in school, and in your community. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Discuss three career fields that might utilize the skills of an inventor. \_\_\_\_\_  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

**Requirement resources can be found here:**  
[http://www.meritbadge.org/wiki/index.php/Inventing#Requirement\\_resources](http://www.meritbadge.org/wiki/index.php/Inventing#Requirement_resources)

## 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.