



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 December 2013.

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
Comments or suggestions for changes to the **requirements** for the **merit badge** should be sent to: Merit.Badge@Scouting.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.

- b. Read about three inventors.

<input type="checkbox"/> 1.	
<input type="checkbox"/> 2.	
<input type="checkbox"/> 3.	

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

3. Do EACH of the following:

a. Define the term intellectual property.

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:

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The types of intellectual property that can be protected:

How such property is protected:

Why protection is necessary:

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

Components:

Types of patents available:

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

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

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

d. Explain the term patent infringement.

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

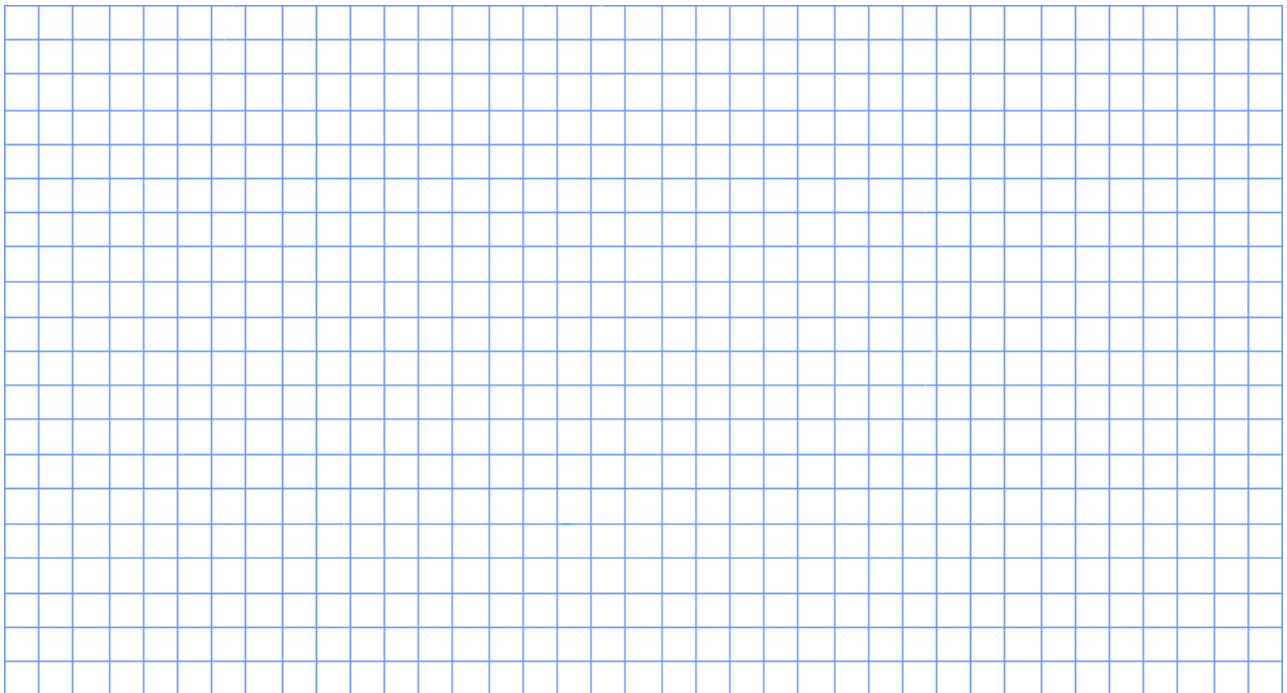
Tell your counselor about one nonpatented or noncopyrighted invention and its impact on society.

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:

Make a sketch:



Discuss your recommendations:

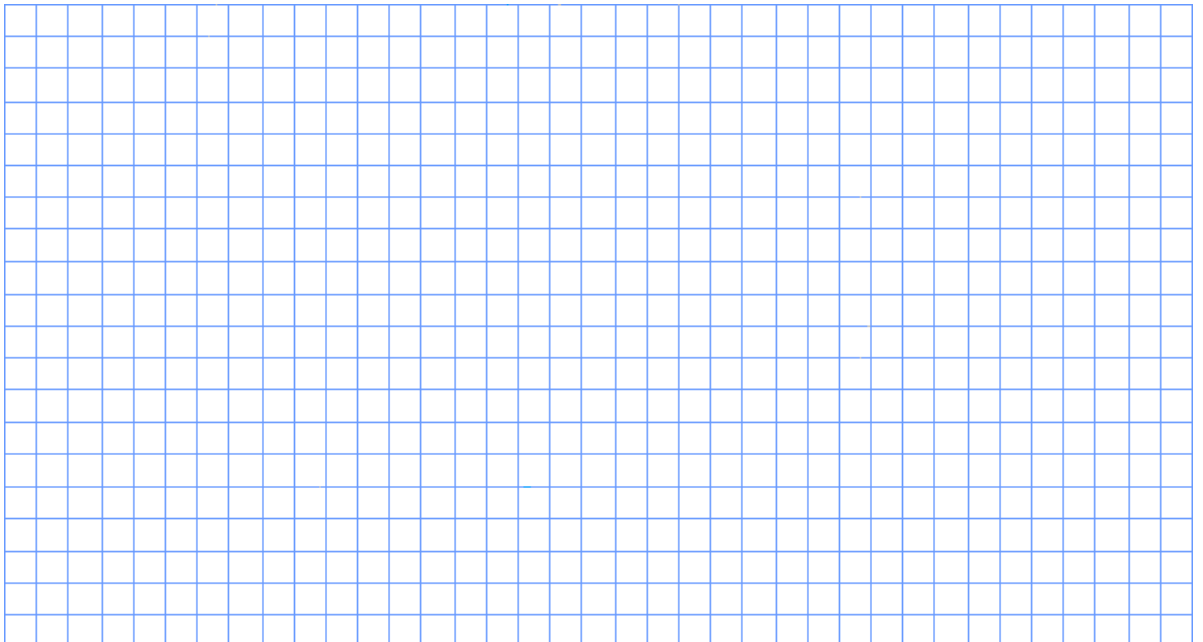
- 6. Think of an item you would like to invent that would solve a problem for your family, troop, chartered organization, community, or a special-interest group.

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.

- c. Share the idea and model with your counselor and potential users of your invention. Record their feedback in your notebook.

- 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.

*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.

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

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.

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Requirement resources can be found here:
http://www.meritbadge.org/wiki/index.php/Inventing#Requirement_resources

Important excerpts from the [Guide To Advancement - 2013](#), No. 33088 (SKU-618673)

[1.0.0.0] — Introduction

The current edition of the *Guide to Advancement* is the official source for administering advancement in all Boy Scouts of America programs: Cub Scouting, Boy Scouting, Varsity Scouting, Venturing, and Sea Scouts. It replaces any previous BSA advancement manuals, including *Advancement Committee Policies and Procedures*, *Advancement and Recognition Policies and Procedures*, and previous editions of the *Guide to Advancement*.

[Page 2, and 5.0.1.4] — Policy on 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 special needs. For details see section 10, “Advancement for Members With Special Needs”.

[Page 2] — 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.

[7.0.3.1] — The Buddy System and Certifying Completion

A youth member must not meet one-on-one with an adult. 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 verification. 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.

Note that from time to time, it may be appropriate for a requirement that has been met for one badge to also count for another. See “Fulfilling More Than One Requirement With a Single Activity,” 4.2.3.6.

[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.

It is sometimes reported that Scouts who have received merit badges through group instructional settings have not fulfilled all the requirements. To offer a quality merit badge program, council and district advancement committees should ensure the following are in place for all group instructional events.

- Merit badge counselors are known to be registered and approved.
- Any guest experts or guest speakers, or others assisting who are not registered and approved as merit badge counselors, do not accept the responsibilities of, or behave as, merit badge counselors, either at a group instructional event or at any other time. Their service is temporary, not ongoing.
- Counselors agree not to assume prerequisites have been completed without some level of evidence that the work has been done. Pictures and letters from other merit badge counselors or unit leaders are the best form of prerequisite documentation when the actual work done cannot be brought to the camp or site of the merit badge event.
- There is a mechanism for unit leaders or others to report concerns to a council advancement committee on summer camp merit badge programs, group instructional events, and any other merit badge counseling issues—especially in instances where it is believed BSA procedures are not followed. See “Reporting Merit Badge Counseling Concerns,” 11.1.0.0.
- 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.

[7.0.3.3] — Partial Completions

A Scout need not pass all the requirements of one merit badge with the same counselor. It may be that due to timing or location issues, etc., he must meet with a different counselor to finish the badge. 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, the counselor does not retain his or her 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 unit leader 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 Scout’s 18th birthday. Units, districts, or councils shall not establish other expiration dates for partial merit badges.

[7.0.4.8] — Unofficial Worksheets and Learning Aids

Worksheets and other materials that may be of assistance in earning merit badges are available from a variety of places including unofficial sources on the Internet and even troop libraries. Use of these aids is permissible as long as the materials can be correlated with the current requirements that Scouts must fulfill. Completing “worksheets” may suffice where a requirement calls for something in writing, but this would not work for a requirement where the Scout must discuss, tell, show, or demonstrate, etc. Note that Scouts shall not be required to use these learning aids in order to complete a merit badge.