



Inventing

Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet (book). No one can add or subtract from the Boy Scout Requirements #33216. Each Scout must do each requirement. Merit Badge Workbooks and more: [Online Resources](#). Send comments to the workbook developer: craig@craiglincoln.com. Requirements revised: 04/1/10, Workbook updated: 07/10.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Ph #: _____

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. _____

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. _____

-OR-

b. Read about three inventors. _____

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. _____

b. Explain the components of a patent

_____ and the different types of patents available.

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. _____

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. _____

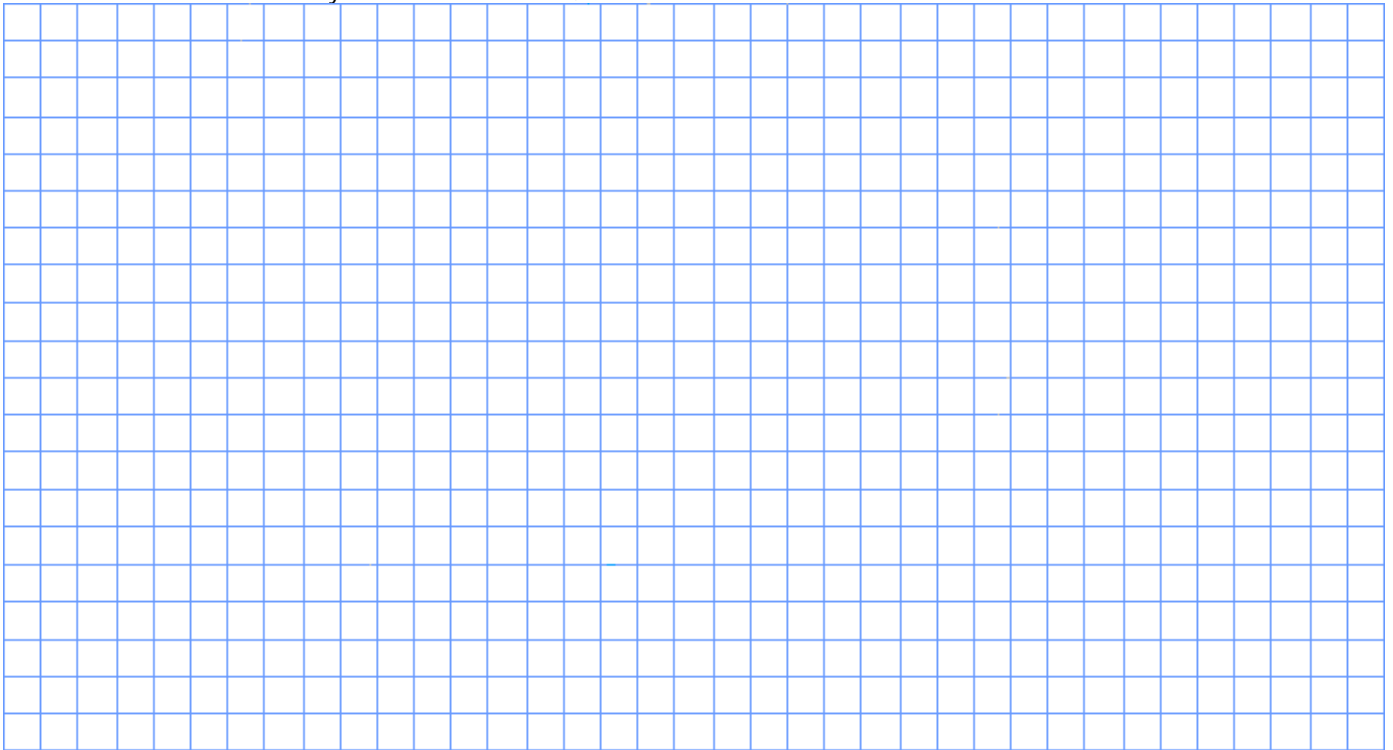
4. Discuss with your counselor the types of inventions that are appropriate to share with others without protecting and explain why. _____

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. _____

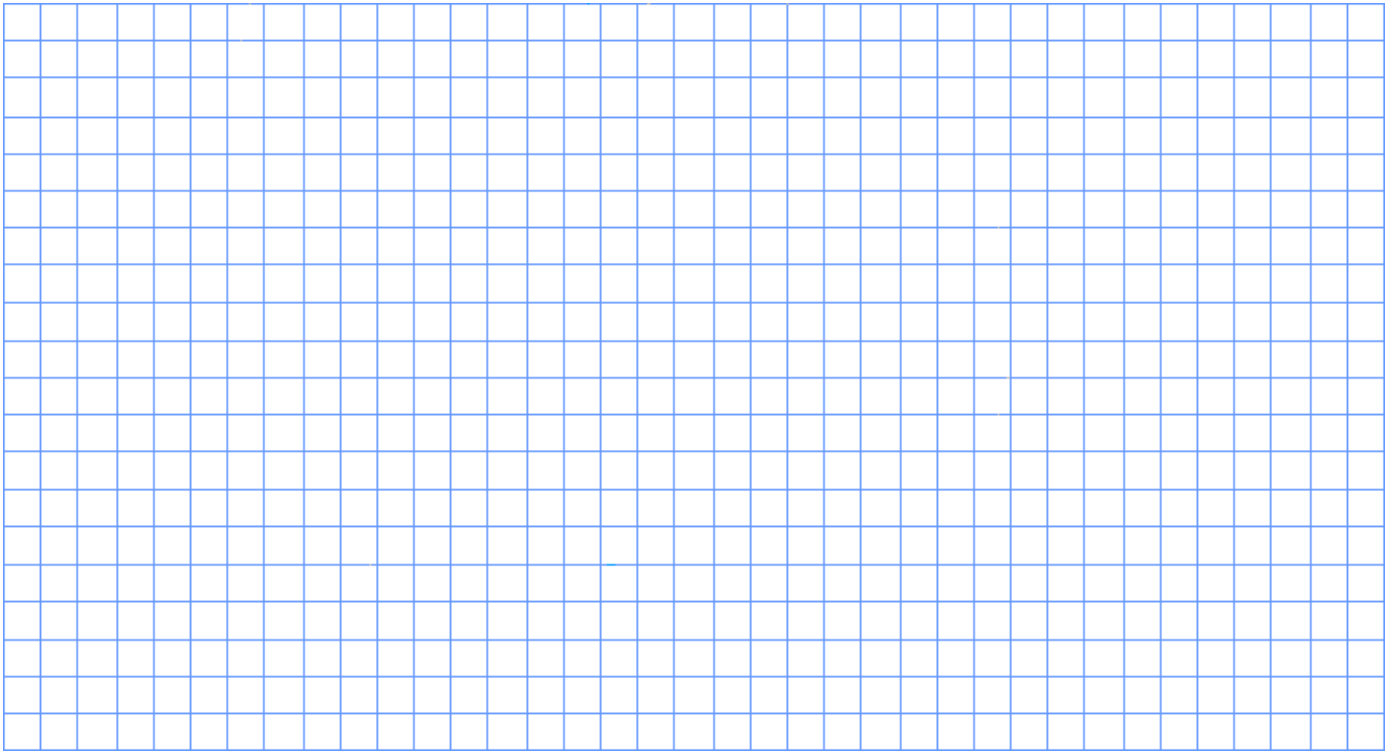
6. Think of an item you would like to invent that would solve a problem for your family, troop, chartered organization, community, or a special-interest group. _____

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. _____

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. _____

-OR- 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. _____

Online Resources (Use any Internet resource with caution and only with your parent's or guardian's permission.)

Boy Scouts of America: ► scouting.org ► [Guide to Safe Scouting](#) ► [Age-Appropriate Guidelines](#) ► [Safe Swim Defense](#)
 ► [Scout](#) ► [Tenderfoot](#) ► [Second Class](#) ► [First Class](#) ► [Rank Videos](#) ► [Safety Afloat](#)

Merit Badge Books: www.scoutstuff.org Please don't post workbooks on your site. Please instead post links to these:
 MeritBadge.org: <http://meritbadge.org/wiki/index.php/MBW> -or- usscouts.org: <http://www.usscouts.org/mb/worksheets/list.asp>

Requirement Resources

These resources and more are at: <http://meritbadge.org/wiki/index.php/Inventing>

1. Inventing - Websters Dictionary: <http://www.merriam-webster.com/dictionary/inventing>
 Wikipedia: <http://en.wikipedia.org/wiki/Inventing>
- 1.a. Intellectual Property & Economic Growth: http://en.wikipedia.org/wiki/Intellectual_property#Economic_growth
- 1.b. Famous Inventions By Kids: <http://invention.lifetips.com/cat/64059/kids-and-inventions/index.html>
Native American Inventions: [adobe](#) - [chewing gum](#) - [chocolate](#) - [cornmeal](#) - [hammocks](#) - [hockey](#) - [igloos](#) - [kayak](#)
 - [maracas](#) - [moccasins](#) - [potato chips](#) - [tipi](#) - [tortillas](#)
 Famous US Inventions: http://en.wikipedia.org/wiki/List_of_United_States_inventions
- 2.b. Inventions named for their inventors: http://en.wikipedia.org/wiki/List_of_inventions_named_after_people
 Prolific Inventors: http://en.wikipedia.org/wiki/List_of_prolific_inventors
 Famous Inventors: http://en.wikipedia.org/wiki/List_of_inventors
- 3.a. Intellectual property definition:
 US Commerce Commission Definition: http://www.stopfakes.gov/sf_what.asp
 Websters Dictionary: <http://www.merriam-webster.com/dictionary/intellectual%20property>
 Wikipedia: http://en.wikipedia.org/wiki/Intellectual_property
 US Patent and Trademark Office: <http://www.uspto.gov/>
 Types of intellectual property: http://www.stopfakes.gov/sf_what.asp - <http://uvapf.org/ip> -
<http://www.abanet.org/intelprop/4types.html> - <http://www.inventorbasics.com/IP%20Options.htm>
 Webster's Dictionary: [Copyright](#) - [Patent](#) - [Trade secret](#) - [Trademark](#)
 Wikipedia: [Copyright](#) - [Patent](#) - [Trade secret](#) - [Trademark](#)
 Protection of Intellectual Property: http://www.stopfakes.gov/sf_who.asp
 Copyright Basics: <http://www.copyright.gov/circs/circ1.pdf> Protection: <http://www.copyright.gov/circs/circ22.pdf>
 Wikipedia Patent Enforcement: http://en.wikipedia.org/wiki/Utility_patent#Enforcement
- 3.b. Components of a patent specification:
 PatentLens: <http://www.patentlens.net/daisy/patentlens/2341.html>
 About.com Specification Section Headings: <http://inventors.about.com/od/patentsbasics/a/Specifications.htm>
 Three Types of patents: <http://www.uspto.gov/patents/index.jsp>

<http://www.uspto.gov/web/offices/ac/ido/oeip/taf/patdesc.htm>
- 3.c. Google Patent Search: <http://www.google.com/patents> (keep hitting Refresh to see many famous patents)
 US Patent Number Search: <http://patft.uspto.gov/netahtml/PTO/patimg.htm>
 US Patent Office Simple Patent Search: <http://www.uspto.gov/web/offices/ac/ahrpa/opa/kids/kidsearch.html>
- 3.d. Patent infringement: http://en.wikipedia.org/wiki/Patent_infringement
4. Wikipedia Patentability Requirements: <http://en.wikipedia.org/wiki/Patentability>

Is it patentable?: <http://inventors.about.com/od/applicationforms/a/Patentable.htm>

What is Non-copyrightable?: http://inventors.about.com/od/copyrights101basicsfaq/f/copyright_no.htm

6. & 7. Quick Invention Ideas -

US Patent Office Fun Inventing - Kids' Pages: <http://www.uspto.gov/web/offices/ac/ahrpa/opa/kids/index.html>

Pencil Invention Ideas: http://www.noogenesis.com/inventing/pencil/pencil_page.html

More fun invention ideas: http://kids.lovetoknow.com/wiki/Invention_Ideas_for_Kids

PBS Kids Design Squad: <http://pbskids.org/designsquad>

General Resources

Make Magazine: <http://makezine.com>

Free Patents Online: <http://www.freepatentsonline.com>

MIT Invention Program: <http://web.mit.edu/invent>

Inventors Digest: <http://www.inventorsdigest.com>

Howtoons: <http://www.howtoons.com>

U.S. Patent and Trademark Office: <http://www.uspto.gov>