

Inventing

Merit Badge Workbook

Merit badges are earned by doing: reading the pamphlet, practicing the skills, and showing your counselor what you have learned.
This workbook gives you a place to organize your notes and track your progress along the way.
Merit badge counselors may not require the use of this or any similar workbook.
You still must satisfy your counselor that you can demonstrate each skill and have learned the information.
Use the space under each requirement to note what you have done and what you want to talk about, not to write out full answers.
When a requirement says discuss, show, tell, explain, or demonstrate, that is what you must do.
No one may add to or subtract from the official requirements found on scouting.org (Guide to Advancement 7.0.4.8).
Scouting America last updated this badge's requirements page on December 31, 2025.
Requirements change from time to time. Double-check scouting.org before you start.

Scout's name: _____ Unit: _____ Date started: _____

Counselor's name: _____ Phone no.: _____ Email: _____

Links marked "Scouting America resources" are the ones Scouting America shares on its official badge page.
This workbook is unofficial and not endorsed by Scouting America.

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

Scouting America resources: What Is Invention (video)

Inventing in my own words

(a) Explain to your counselor the role of inventors and their inventions in the economic development of the United States.

Scouting America resources: The Industrial Revolution: Inventions and Changes (video) · What Is Economic Development (video)

The role of inventors and their inventions in the economic development of the United States

(b) List three inventions and state how they have helped humankind.

Scouting America resources: Top 5 Inventions That Changed the World (video) · 7 Inventions That Changed The World (video)

Three inventions

Invention	How it has helped humankind

Requirement 1 completed on _____ counselor initials _____

2. Do ONE of the following:

☐ **(a)** With your parent or guardian's permission and counselor's approval, interview an adult who has invented a useful item or process. Report what you learned to your counselor.

Scouting America resources: National Inventors Hall of Fame Inductees Have Changed the World (website)

Adult I interviewed _____ What they invented _____ Date _____

What I learned

☐ **(b)** Read about three inventors. Select the one you find most interesting and tell your counselor what you learned.

Three inventors I read about

Inventor	What they invented	Where I read about them

The one I find most interesting _____

What I learned about them

Requirement 2 completed on _____ counselor initials _____

3. Do the following:

(a) Define the term intellectual property. Explain which government agencies oversee the protection of intellectual property, the types of intellectual property that can be protected, how such property is protected, and why protection is necessary.

Scouting America resources: What Is Intellectual Property & Why Do I Care (video)

Intellectual Propert Law: The Basics of Patent Law (video) · Tips for Protecting Your Business's Intellectual Property (video)

Intellectual property in my own words

Protecting intellectual property

What to explain	My notes
Government agencies that oversee it	
Types that can be protected	
How it is protected	
Why protection is necessary	

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

Scouting America resources: What Are the Types of Patents? (video)

The components of a patent

The different types of patents available

(c) Examine your Scouting gear and find a patent number on a camping item you have used. With your parent or guardian'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.

Scouting America resources: US Patent and Trade Office Basic Search (website)

Camping item _____ Patent number _____

How the finished item compares with the claims and drawings in the patent

What I learned

(d) Explain to your counselor the term patent infringement.

Scouting America resources: Patent Infringement (video)

Patent infringement in my own words

Requirement 3 completed on _____ counselor initials _____

4. Discuss with your counselor the types of inventions that are appropriate to share with others, and explain why. Tell your counselor about one unpatented invention and its impact on society.

Scouting America resources: Unlucky Inventors Who Never Got To Cash In (video)

Types of inventions that are appropriate to share with others, and why

One unpatented invention _____

Its impact on society

Requirement 4 completed on _____ counselor initials _____

5. Choose a commercially available product that you have used on an overnight camping trip with your troop. Make recommendations for improving the product, and make a sketch that shows your recommendations. Discuss your recommendations with your counselor.

Product I used _____ Camping trip and date _____

My recommendations for improving it

My sketch showing my recommendations (draw here or attach)

Requirement 5 completed on _____ counselor initials _____

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 the following, while keeping a notebook to record your progress.

Scouting America resources: Inventing 101 (video) · Little Inventors: How To Think Up Invention Ideas (video) Turning Imagination into Reality (video)

Item I would like to invent _____ Who it would help _____

(a) Talk to potential users of your invention and determine their needs. Then, based on what you have learned, write a statement describing the invention and how it would help solve a problem. This statement should include a detailed sketch of the invention.

Scouting America resources: User Needs Statement in Design Thinking (video) · The Secret to Successfully Pitching an Idea (video) How To Make a Virtual "Frankenstein" Prototype Feat (video)

Potential users I talked to

Person	Their needs

My statement: the invention and how it would help solve a problem

My detailed sketch of the invention (draw here or attach)

(b) Create a model of the invention using clay, cardboard, or any other readily available material. List the materials necessary to build a working prototype of the invention.

Scouting America resources: How To Make a Cardboard Prototype (video)

What I made my model from

Materials needed for a working prototype

Material	How much	Where I can get it

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

Feedback on my idea and model

Who	Date	Their feedback

Requirement 6 completed on _____ counselor initials _____

7. Build a working prototype of the item you invented for requirement 6. Test and evaluate the invention. Among the aspects to consider in your evaluation are cost, usefulness, marketability, appearance, and function. Describe how your original vision and expectations for your invention are similar or dissimilar to the prototype you built. Have your counselor evaluate and critique your prototype. Note: Before you begin building the prototype, you must have your counselor's approval, based on the design and building plans you have already shared.

Scouting America resources: How To Build Prototypes! (video)

☐ My counselor approved my design and building plans before I began building

Testing and evaluating my prototype

Aspect	How my prototype did
Cost	
Usefulness	
Marketability	
Appearance	
Function	

My original vision and expectations compared with the prototype I built

My counselor's evaluation and critique

Requirement 7 completed on _____ counselor initials _____

8. Do ONE of the following:

☐ **(a)** Participate with a club or team (robotics team, science club, or engineering club) that builds a useful item. Share your experience with your counselor.

Scouting America resources: About FIRST Robotics Competition (2021) (video) · About VEX Robotics (video)

Club or team _____ What we built _____

My experience

☐ **(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.

Scouting America resources: National Museum's Database (website) · National Inventors Hall of Fame (website) Smithsonian's Lemelson Center (website) · National Inventors Hall of Fame and Museum (website)

Museum or exhibit _____ Date visited _____

My presentation plan

Group I shared it with _____ Date _____

Requirement 8 completed on _____ counselor initials _____

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.

Scouting America resources: Meaningful Soft Skills for Inventors (video) · Work of an Examiner (video)
Why a Career in Science Is for Me (video)

What it takes to be an inventor

Area	What I found
Skills	
Education	
Training	
Experience	

How I can prepare myself to be creative and inventive at home, in school, and in my community

Three career fields that might use the skills of an inventor

Career field	How it uses an inventor's skills

Requirement 9 completed on _____ counselor initials _____

Counselor sign-off

Your counselor signs your blue card or approves the badge in Scoutbook, and your unit records it. This line is for your own records.

Counselor's signature _____ Date completed _____

Official Scouting America resources

Scouting America resources: Inventing merit badge page (requirements and resources) · Inventing merit badge pamphlet (free PDF)
All merit badges

Made by Cole at ScoutSmarts.com, an Eagle Scout who loves helping Scouts.
Spot an error or a requirement change? Tell me at scoutsmarts.com/contact.
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