

Cybersecurity

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. Safety. Do the following:

(a) View the Personal Safety Awareness "Digital Safety" video (with your parent or guardian's permission).
Scouting America resources: Personal Safety Awareness "Digital Safety" (video)

Date I watched it _____ Watched with _____

(b) Explain to your counselor how to protect your digital footprint, such as while using social media, mobile device apps, and online gaming. Show how to set privacy settings to protect your personal information, including photos of yourself or your location.
Scouting America resources: Protecting Your Digital Footprint - Keys to Cybersecurity (website)

Protecting my digital footprint

Where	How I protect my digital footprint there
social media	
mobile device apps	
online gaming	

Privacy settings I showed (app or device) _____ Date _____

(c) Discuss first aid and prevention for potential injuries, such as eye strain, repetitive injuries, and handling electronics devices, that could occur during repeated use. Discuss how to keep yourself physically safe while using a mobile device (for example while walking or biking).

Scouting America resources: How to Avoid Strained Eyes From Staring at Digital Screens (video)
Doctors Share How to Prevent Smartphone Related Injuries Like "Text Neck" and "Smartphone Pinky." (video)
Computer Ergonomics (website)

Injuries from repeated use

Potential injury	Prevention	First aid
eye strain		
repetitive injuries		
handling electronics devices		

Staying physically safe while using a mobile device (walking, biking)

Requirement 1 completed on _____ counselor initials _____

2. Ethics. Do the following:

(a) Relate three points of the Scout law to things people do on the internet or with computers, phones, and other connected electronic devices.

Scouting America resources: Code of Ethics (website) · The Ten Commandments of Computer Ethics (website)

Three points of the Scout Law

Point of the Scout Law	How it relates to what people do online or with devices

(b) Discuss with your counselor examples of ethical and unethical behavior in cyberspace. Include how to act responsibly when you encounter situations such as: coming across an unattended or unlocked computer or mobile device; observing someone type their password or seeing it written down near a computer; or discovering a website that is not properly secured. Explain why these situations require good judgment, and how the Scout Law and personal values should guide your actions.

Scouting America resources: Understanding Cybersecurity Ethics: Navigating Privacy and Security Challenges (website)

Examples of ethical and unethical behavior in cyberspace

Acting responsibly

Situation	How I would act
coming across an unattended or unlocked computer or mobile device	
observing someone type their password or seeing it written down near a computer	
discovering a website that is not properly secured	

Why these need good judgment, and how the Scout Law and my values guide me

Requirement 2 completed on _____ counselor initials _____

3. Fundamentals. Do the following and discuss each with your counselor:

(a) Describe three types of computer systems that need protecting and explain why.

Scouting America resources: Cybersecurity Explained | Future of Tech (video)
Cybersecurity In Critical Infrastructure: Protecting Power Grids and Smart Grids - Cyber Defense Magazine (website)

Three types of computer systems that need protecting

Type of computer system	Why it needs protecting

(b) Explain the "C.I.A. Triad"—Confidentiality, Integrity, and Availability—and why these three principles are fundamental to cybersecurity.

Scouting America resources: What Is the CIA Triad (IBM Technology) (video) · What Is the CIA Triad? | Coursera (website)

The C.I.A. Triad

Principle	What it means	Why it is fundamental to cybersecurity
Confidentiality		
Integrity		
Availability		

Requirement 3 completed on _____ counselor initials _____

4. Cyber Threats, Vulnerabilities, and Attacks. Do the following and discuss each with your counselor:

(a) Define the terms vulnerability, threat, and exploit, and give an example of each that might apply to a website or software product you use.

Scouting America resources: The Internet: Cybersecurity & Crime (video)
Hackers & Cyber Attacks: Crash Course Computer Science #32 (video) · Protecting Your Digital Footprint - Keys to Cybersecurity (website)

Three terms

Term	Definition	Example for a website or software I use
vulnerability		
threat		
exploit		

(b) Pick one type of malware (such as virus, worm, Trojan, backdoor, spyware, or ransomware) and find out how it works. Explain what it does and the harm it can cause.

Scouting America resources: Computer Malware (Article) | Cyber Attacks | Khan Academy (website)
Every Type of Computer Virus Explained in 8 Minutes (video) · 5 of the Worst Computer Viruses Ever (video)

The malware I picked, how it works, what it does, and the harm it can cause

(c) Identify two risks of using public Wi-Fi and describe how to reduce or avoid those risks.

Scouting America resources: Is Public Wi-Fi Safe? (video) · Connected Devices - Keys to Cybersecurity (website)
Hacker Demonstrates Security Risks Of Free Public Wi-Fi (video)

Two risks of using public Wi-Fi

Risk	How to reduce or avoid it

(d) Describe what spoofing and phishing are, and how to recognize a message or website that might be trying to trick you. Explain what steps you should take to protect yourself and others if you come across one.

Scouting America resources: Online Threats and Vulnerabilities - Keys to Cybersecurity (website)
How Not to Get Hacked: Phishing (video) · Be Internet Alert (website)

Spoofing and phishing

Term	What it is	How to recognize a message or website
spoofing		
phishing		

Steps to protect myself and others if I come across one

(e) Current Events. Do ONE of the following:

☐ **(1)** Read an article or a news report about a recent cybersecurity incident, such as a data breach or malware infection. Explain how the incident happened (to the best of your ability based on the information available) and what the consequences are or might be to the victim.

Scouting America resources: Featured Conversation Starters - Savvy Cyber Kids (website)
Krebs on Security - In-Depth Security News and Investigation (website)
Security News: Cybersecurity, Hacks, Privacy, National Security | WIRED (website)
Cybersecurity News, Insights and Analysis | SecurityWeek (website)

Article or news report _____ Source and date _____

How the incident happened, and the consequences to the victim

☐ **(2)** With your parent or guardian's permission, watch a movie or read a book in which cybersecurity plays a significant role. Discuss how cybersecurity topics were depicted and how realistic you think it was.

Movie or book _____ Date _____

How cybersecurity topics were shown, and how realistic I think it was

(f) Create a list of what is part of your cyber attack surface including all the ways someone could try to access your personal information or devices—such as online accounts, apps, or home networks.

Scouting America resources: What Is an Attack Surface? | Cybersecurity Explained in 60 Seconds (video)

My cyber attack surface

What it is (account, app, device, network)	How someone could try to get in

Requirement 4 completed on _____ counselor initials _____

5. Cyber Defenses. Do the following:

(a) Describe three technologies that are used to defend a computer or network, such as access controls, antivirus software, firewall, intrusion detection/prevention systems, and Virtual Private Network.

Scouting America resources: How Not To Get Hacked: Install Updates (Code.org) (video) · Update Software | CISA (website)

Three defense technologies

Technology	How it defends a computer or network

(b) Installing updates. Do the following:

(1) Explain to your counselor the importance of installing the latest updates on your computer, why they are needed, and what kinds of problems they can prevent.

Scouting America resources: How Not To Get Hacked: Install Updates (Code.org) (video)
How Important Are Software Updates (website)

Why updates matter, and the problems they prevent

(2) Demonstrate to your counselor how to check for, download, and install the latest updates for your computer or mobile device, or another computer you have permission to use. (If you are unable to do this on your computer, you may use an online guide with screenshots to demonstrate this.) Show your counselor how to verify that your computer or mobile device is up-to-date.

Scouting America resources: Keep Your Device's Operating System and Applications Up to Date | CISA (website)

Computer or device _____ Date _____

- ☐ Checked for updates
- ☐ Downloaded and installed them
- ☐ Showed it is up to date
- ☐ Used an online guide instead

(c) System security. With your parent or guardian's permission, do THREE of the following using a computer or mobile device, and discuss with your counselor:

☐ **(1)** Describe what makes a good password and why. Set or change an account password to one that is "strong."

Scouting America resources: How Not to Get Hacked: Passwords (video)
Defense in Depth - Keys to Cybersecurity | Cyber.org (website)
Why Creating a Strong password Really Matters | Khan Academy (website) · Secure Your Secrets (website)

What makes a good password, and why

Account I updated (never write the password here) _____ Date _____

☐ **(2)** Describe multi-factor authentication (MFA) and how it can be used to improve security. Demonstrate how to use an authenticator app or other MFA function.

Scouting America resources: Defense in Depth - Keys to Cybersecurity | Cyber.org (website)
Multi-factor Authentication | Khan Academy (website) · Multi-factor Authentication Facts (website)

What MFA is, and how it improves security

Authenticator app or MFA function I showed _____ Date _____

☐ **(3)** Install and set up a password manager. Demonstrate how it works to your counselor.

Scouting America resources: Yes, You Need a Password Manager. Here's Why | Khan Academy (website)

Password manager I set up _____ Date _____

How it works

☐ **(4)** Run a virus scan. Show the results to your counselor.

Scouting America resources: Understanding Anti-Virus Software | CISA (website)
Ensure Your OS Antivirus and Anti-Malware Protections are Active | CISA (website)
How to Start a Scan for Viruses or Malware in Microsoft Defender - Microsoft Support (website)
How to Run a Virus Scan on Windows 11: A Step-by-Step Guide - Solve Your Tech (website)
How to Scan an Android Phone for Malware - Android Authority (website) · MalwareBytes Free Virus Scanner (website)
Free Online Virus Scan | Trend Micro HouseCall | Trend Micro (US) (website)

Scan tool _____ Device _____ Date _____

My scan results

☐ **(5)** Using a command line or other built-in tool, see what programs or processes are running on your computer. Discuss with your counselor what you see and what surprises you.

Scouting America resources: How to View All Running Processes in Windows 10 & 11 (video)
How to Tell What's Running in the Background on Your PC (video)
View Information About Mac Processes in Activity Monitor - Apple Support (video)
Kill Apps and Processes on Chromebook Using the Task Manager (video)
How to Access Your Chromebook's Task Manager (video)

Tool or command I used _____ Device _____

What I saw, and what surprised me

☐ **(6)** Use a command line interface to view your computer's open network connections. Discuss the results with your counselor.

Scouting America resources: How to Use the Netstat Command (video) · How to Use the Netstat Command on Mac (website)
View Your Linux Server's Network Connections With Netstat | Opensource.com (website)

Command I used _____ Date _____

What the results showed

☐ **(7)** Demonstrate how to back up your data from a mobile device to a local computer or the cloud.

Scouting America resources: How to Back Up With iCloud - Apple Support (website)
How to Back up Your iPhone, iPad, and iPod Touch - Apple Support (website)
iCloud Data Security Overview - Apple Support (website)
Back Up or Restore Data on Your Android Device - Android Help (google.com) (website)
Back Up Your Device - Android - Google One Help (website)

Mobile device _____ Backed up to (computer or cloud) _____ Date _____

☐ **(8)** Research best practices for protecting a home computer or network, and make a checklist of FIVE things you and your family can do to stay secure.

Scouting America resources: How To Secure My Home WiFi Network (website) · Home Network Security | CISA (website) Best Practices for Securing Your Home Network | NSA (PDF)

Where I researched

Our home security checklist

What we can do	Why it helps

☐ **(9)** Identify one or more other vulnerabilities on your home computer or network or another computer or network you have permission to use and discuss with your counselor. With permission from the system owner, take the necessary actions to fix it.

Computer or network Owner who gave permission

The vulnerability I found

What I did to fix it

Requirement 5 completed on counselor initials

6. Cryptography. Do the following:

(a) Research and explain to your counselor three situations where encryption is used in cybersecurity. For each situation, describe what kind of encryption is used and why it is important.

Scouting America resources: Cryptography: Crash Course Computer Science #33 (video) The Science of Codes: An Intro to Cryptography (video) · The Need for Encryption | Khan Academy (website) The Internet: Encryption & Public Key (Code.org) (video)

Three situations where encryption is used

Situation	Kind of encryption	Why it is important

(b) Show how you can know if your connection to a website is encrypted.

Scouting America resources: How Not to Get Hacked: Websites and Wi-Fi (video)

How I can tell my connection is encrypted

(c) Do ONE of the following:

☐ **(1)** Create your own encryption code, such as a substitution cipher or code book, and demonstrate using it to encrypt and decrypt a message. Describe the strengths and weaknesses of your code.

Scouting America resources: Encryption, Decryption, and Cracking | Khan Academy (website)
Symmetric Encryption Techniques | Khan Academy (website) · How to Create Substitution Ciphers: 9 Steps (With Pictures) (website)

How my code works

My message, encrypted and decrypted

Strengths and weaknesses of my code

☐ **(2)** Download and set up an app (from an official app store) that uses end-to-end encryption. Explain to your counselor what this means, how it works, and why it is more secure than other forms of communication (e.g. SMS).

Scouting America resources: The Best Private Messaging Apps for 2025 | PCMag (website)
The Best Encrypted Messaging Apps in 2025 | Tom's Guide (website)
The Seven Best Secure Messaging Apps With End-to-End Encryption | The Verge (website)
NSA Warning-Change Your iPhone and Android Message Settings (website)

App I set up _____ Date _____

What end-to-end encryption means, how it works, and why it is more secure than SMS

☐ **(3)** Use a hashing tool (for example, using SHA or MD5) to create a checksum for a file, document, or piece of text. Have a fellow Scout or your counselor make a change to it, then recreate the checksum and compare the new checksum to the original as a demonstration of file integrity checking.

Scouting America resources: Hashing Algorithms and Security - Computerphile (video)
Online Hash Calculator - Online Tools (website)
How to Quickly Verify MD5, SHA1, and SHA2 (256, 384, 512) Checksum in Windows Using Command Prompt (video)

Hashing tool _____ Who made the change _____

Comparing checksums

Version	Checksum
Original	
After the change	

What the comparison showed

☐ **(4)** Create your own PGP (pretty good privacy) email key. Share your public key with others (and your counselor). Also, get their public keys and add them to your computer's key ring. Send a message that has been digitally encrypted.

Scouting America resources: PGP Encryption With Kleopatra - Kevin's Guides (website)
How to Use PGP/GPG Encryption - in 2 Minutes - PGP /GPG Tutorial for Beginners (video)

☐ Created my PGP key
☐ Shared my public key
☐ Added their public keys to my key ring
☐ Sent an encrypted message

People I swapped keys with _____

Requirement 6 completed on _____ counselor initials _____

7. Connected Devices and Internet of Things (IoT). Describe to your counselor four electronic devices you encounter that could be connected to the internet, why this connectivity can be useful, what risks are posed by the connectivity, and how they could be protected.

Scouting America resources: Connected Devices - Keys to Cybersecurity | Cyber.org (website)
Internet of Things | What is IoT ? | How IoT Works? | IoT Explained in 6 Minutes | Simplilearn (video)
What is the Internet of Things (IoT)? | IBM (website)

Four connected devices

Device	Why connecting it is useful	Risks	How it could be protected

Requirement 7 completed on _____ counselor initials _____

8. Cybersecurity Activities. Do ONE of the following:

☐ **(a)** Learn about a cybersecurity competition, camp, or other activity you could participate in (either now or in the future). Share what you learned with your counselor, including the type of activity, time commitment, and age of participants.

Scouting America resources: CyberPatriot: National Youth Cyber Defense Competition (website) · AFA CyberCamps (website)
U.S. Cyber Camp (website) · National Cyber League (website)

Competition, camp, or activity _____

What I learned

Detail	What I found out
type of activity	
time commitment	
age of participants	

☐ **(b)** Participate in a cybersecurity competition with members of your troop, school, or some other group approved by your counselor. Either design your own competition or use an existing platform.

Scouting America resources: Cyber Threat Defender—The UTSA CIAS (website)
K-12 Cybersecurity Games—The UTSA CIAS (website) · picoCTF—CMU Cybersecurity Competition (website)

Competition or platform _____ Group _____ Date _____

What we did, and how it went

☐ **(c)** Give a presentation to your patrol, troop, or another group approved by your counselor, on a cybersecurity topic of your choice. Your presentation must include at least one demonstration and/or hands-on activity.

Topic _____ Group _____ Date _____

Presentation outline

My demonstration or hands-on activity _____

Requirement 8 completed on _____ counselor initials _____

9. Careers. Do ONE of the following:

☐ **(a)** Identify three career opportunities that would use skills and knowledge in cybersecurity. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.

Scouting America resources: Career Exploration Cards | Cyber.org (PDF) · Degrees & Certifications | Cyber.org (website)
Information Security and Forensics Analyst | What I Do (video)

Three careers that use cybersecurity

Career	How it uses cybersecurity skills

The career I picked _____

What I found out about it

Topic	What I found
training	
education	
certification requirements	
experience	

What I found out about it (continued)

Topic	What I found
expenses	
prospects for employment	
starting salary	
advancement opportunities	
career goals	

Whether I might be interested in this career, and why

☐ **(b)** Visit a business or organization that does work in cybersecurity. Find out about different work roles, what they do, and how they acquired their knowledge through college degrees or certifications. Share what you learned with your counselor.

Business or organization _____ Date _____

Work roles I learned about

Work role	What they do	How they learned it (degree or certification)

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: Cybersecurity merit badge page (requirements and resources) · 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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