



COMPUTERS

Merit Badge Requirements

- 1) Discuss with your counselor the tips for online safety.
- 2) Explain how the invention of the computer has affected society, science, and technology. In your explanation, give a short history of the computer.
- 3) Do the following:
 - A) Explain four different uses of computers.
 - B) Describe three ways you and your family could use a personal computer other than for games and recreation.
- 4) Explain to your counselor the following:
 - A) The major parts of a computer system
 - B) How the types of files used to store text, sound, pictures, and video are stored in a computer's memory
- 5) Do the following:
 - A) Explain what a program is and how it is developed
 - B) Give three examples of programming languages, and describe their uses
 - C) Name four software packages you or your family could use, and explain how you would use them.
 - D) Discuss ways you can help protect a computer from viruses and how to keep secure information that has been saved on a computer
 - E) Describe how computers are linked to form the Internet and the World Wide Web
- 6) Do THREE of the following:
 - A) Use a database manager to create a troop roster that includes the name, rank, patrol, and telephone number of each Scout. Show your counselor that you can sort the register by each of the following categories: rank, patrol, and alphabetically by name.
 - B) Use a spreadsheet program to develop a food budget for a patrol weekend campout.
 - C) Use a word processor to write a letter to the parents of your troop's Scouts invitation them to a court of honor. Use the program's mail feature to make a personalized copy of the letter for each family.
 - D) Use a computer graphics program to design and draw a campsite plan for your troop, OR design a flyer for an upcoming troop event.
 - E) Using a software package of your choice, develop a short presentation about a topic that has been approved by your counselor. For your presentation create at least 10 slides.
 - F) Using an Internet search engine, find ideas about how to conduct a troop court of honor or campfire program. Print out a copy of the ideas from at least three different Web sites. Share what you found with your counselor, and explain how you used the search engine to find this information.
 - G) Using a digital camera, take a picture of a troop activity. Transfer the picture file to a computer and use photographic software to make it small enough to send easily as an e-mail attachment. Then, using a computer connected to the Internet (with your parents permission), send an e-mail to someone you know. In your message, include the photograph as an attachment. Verify that the person received your e-mail and was able to view the attachment.
 - H) Describe two computer chip-based devices, and explain how they are "smarter" because of the chip and its program.
- 7) Do ONE of the following:
 - A) Visit a business or an industrial plant that uses computers. Observe what tasks the computers accomplish, and be prepared to discuss what you have learned.
 - B) Using a software package of your choice for computer aided design (CAD), create an engineering-style drawing of a simple object. Include the top, bottom, and at least one side view and the dimensions.
 - C) Use a general purpose programming language to write a simple program application of your choice, subject to approval by your counselor
 - D) Design a Web page for your troop, patrol, school, or place of worship. You need not post the page to a Web site. However, if you decide to do so, you will first need to get your parent's permission and your counselor's approval, as well as permission from the host site.

Scout Name: _____ Unit #: _____ Date: _____

8) For each of the following categories, discuss several related terms: input and output devices, storage media, memory, processors and coprocessors, modems or network cards, networks, World Wide Web and Internet, electronic mail, Wi-Fi.

9) Explain the following to your counselor:

- A) Why it is not permissible to accept a free copy of a copyrighted computer game or program from a friend.
- B) The restrictions and limitations of downloading music from the Internet.
- C) Why copyright laws exist.

10) Pick two career opportunities in the computer field that interests you. Find out what education, training, and experience those positions require. Report what you learn to your counselor.

Scout Name: _____ Unit #: _____ Date: _____

Describe 3 ways you and your family could use a personal computer other than for games and recreation.

Use #1: _____

Use #2: _____

Use #3: _____

Requirement 4

Explain the major parts of a computer system:

Part Name: _____

Main Function: _____

Part Name: _____

Main Function: _____

Part Name: _____

Main Function: _____

Part Name: _____

Main Function: _____

Part Name: _____

Main Function: _____

Part Name: _____

Main Function: _____

Part Name: _____

Main Function: _____

Explain how the types of files used to store text, sound, pictures, and video are stored in a computers memory: _____

Requirement 5

Describe what a program is: _____

How is a program developed? _____

Use the area below to list three examples of programming languages and what types of programming they are used for.

Programming Language: _____

What is this programming language used for? _____

Programming Language: _____

What is this programming language used for? _____

Programming Language: _____

What is this programming language used for? _____

Name 4 software packages you or your family could use, and explain how you would use them.

Software Package Name: _____

Use: _____

Software Package Name: _____

Use: _____

Software Package Name: _____

Use: _____

Software Package Name: _____

Use: _____

Discuss ways you can help protect a computer from viruses and how to keep secure information that has been saved on a computer: _____

Describe how computers are linked to form the Internet and the World Wide Web: _____

Requirement 6

You have been given eight options for this requirement. Select and complete **THREE** of them. After you have completed each task and shown the project to your counselor, have your counselor initial the completed options you selected

If you selected **Option A**: Merit Badge Counselors Initials: _____

Use a database manager to create a troop roster that includes the name, rank, patrol, and telephone number of each Scout. Show your counselor that you can sort the register by each of the following categories: rank, patrol, and alphabetically by name.

If you selected **Option B**: Merit Badge Counselors Initials: _____

Use a spreadsheet program to develop a food budget for a patrol weekend campout.

If you selected **Option C**: Merit Badge Counselors Initials: _____

Use a word processor to write a letter to the parents of your troop's Scouts inviting them to a court of honor. Use the program's mail merge feature to make a personalized copy of the letter for each family.

If you selected **Option D**: Merit Badge Counselors Initials: _____

Use a computer graphics program to design and draw a campsite plan for your troop, OR design a flyer for an upcoming troop event.

If you selected **Option E**: Merit Badge Counselors Initials: _____

Using a software package of your choice, develop a short presentation about a topic that has been approved by your counselor. For your presentation create at least 10 slides.

If you selected **Option F**: Merit Badge Counselors Initials: _____

Using an Internet search engine, find ideas about how to conduct a troop court of honor or campfire program. Print out a copy of the ideas from at least three different Web sites. Share what you found with your counselor, and explain how you used the search engine to find this information.

If you selected **Option G**: Merit Badge Counselors Initials: _____

Using a digital camera, take a picture of a troop activity. Transfer the picture file to a computer and use photographic software to make it small enough to send easily as an e-mail attachment. Then, using a computer connected to the Internet (with your parents permission), send an e-mail to someone you know. In your message, include the photograph as an attachment. Verify that the person received your e-mail and was able to view the attachment.

If you selected **Option H**: Merit Badge Counselors Initials: _____

Describe two computer chip-based devices, and explain how they are "smarter" because of the chip and its program.

Chip-Based Device: _____

Explanation: _____

Chip-Based Device: _____

Explanation: _____

Requirement 7

You have been given four options for this requirement. Select and complete ONE of them.

If you selected *Option A*:

What business or industry did you visit that uses computers? _____

What task does the computer accomplish at this business or in this industry? _____

Give a brief summary of your visit and what you observed: _____

If you selected *Option B*:

What CAD program did you use? _____

Show your completed drawing of a simple object to your merit badge counselor and have them initial here: _____

If you selected *Option C*:

*Make sure you get approval for your program before you begin writing it.

What general-purpose programming language did you use to write a program with? _____

Describe the program you wrote and also tell why you wrote it: _____

Show your program to your counselor. If you get the chance, share your program with your Scout unit also.

If you selected *Option D*:

Who did you design your web page for? _____

Show your Web design to your merit badge counselor and have them initial here: _____

Requirement 8

This requirement asks that you prepare yourself to be familiar with and able to discuss several terms used in several computer related categories. Use the area below to make notes and list the terms associated with each category. Discuss these terms with your counselor.

Input/Output Devices: _____

Storage Media: _____

Memory: _____

Scout Name: _____ Unit #: _____ Date: _____

Processors & Coprocessors: _____

Modems or Network Cards: _____

World Wide Web & Internet: _____

Electronic Mail: _____

Wi-Fi: _____

Requirement 9

Why is it not permissible to accept a free copy of a copyrighted computer game or program from a friend? _____

Explain the restrictions and limitations of downloading music from the Internet? _____

Why do copyright laws exist? _____

Scout Name: _____ Unit #: _____ Date: _____

Requirement 10

Pick two career opportunities in the computer field that interest you. Find out what education, training, and experience those positions require.

Job: _____

Education Required: _____

Training Required: _____

Experience Required: _____

Job: _____

Education Required: _____

Training Required: _____

Experience Required: _____

Report what you learn to your counselor. Have your counselor initial here when completed: _____