



2024 Edition

SCOUTMASTER BUCKY

Programming Merit Badge

SCOUTS PARTICIPATING IN A SCOUTMASTER BUCKY MERIT BADGE OPPORTUNITY (ONLINE OR IN PERSON), PLEASE CONSIDER ALSO USING THE PROGRAMMING MERIT BADGE CLASS PREPARATION PAGE FOR CLARIFICATIONS, INSIGHTS, AND EXPECTATIONS.

<https://scoutmasterbucky.com/merit-badges/programming/programming-cpp.pdf>

PROGRAMMING MERIT BADGE WORKBOOK

REQUIREMENT 1a: View the Personal Safety Awareness “Digital Safety” video (with your parent or guardian’s permission).

<https://www.scouting.org/training/youth/scouts-bsa/>

choose the Digital Safety option

Parent’s / Guardian’s Name

Phone

Parent’s / Guardian’s Signature

Date

☐

permission

Notes:



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REQUIREMENT 1b: Discuss first aid and prevention for the types of injuries that could occur during programming activities, including repetitive stress injuries and eyestrain.

Notes:

REQUIREMENT 2a: Give a brief history of programming, including at least three milestones related to the advancement or development of programming.

Notes:



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REQUIREMENT 2b: Discuss with your counselor the history of programming and the evolution of programming languages.

Notes:

REQUIREMENT 3a: Create a list of 5 popular programming languages in use today and describe which industry or industries they are primarily used in and why.

Programming Language	Industry / Industries used in	For What or Why



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REQUIREMENT 3b: Describe three different programmed devices you rely on every day.

Device 1:

Device 2:

Device 3:

REQUIREMENT 4a: Explain the four types of intellectual property used to protect computer programs.

Intellectual Property Type #1:

Intellectual Property Type #2:

Intellectual Property Type #3:

Intellectual Property Type #4:



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REQUIREMENT 4b: Describe the difference between licensing and owning software.

Notes:

REQUIREMENT 4c: Describe the differences between freeware, open source, and commercial software

Freeware:

Open Source:

Commercial Software:

REQUIREMENT 4c: Describe why it is important to respect the terms of use of freeware, open source, and commercial software.

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REQUIREMENT 5a: With your counselor's approval, choose a sample program. Modify the code or add a function or subroutine to it. Debug and demonstrate the modified program to your counselor.

The Programming merit badge website, www.scoutlife.org/programming, has a number of sample programs that you could use for requirement 5a. However, you have the option of finding a program on your own. It's a good idea to seek your merit badge counselor's guidance

COUNSELOR APPROVAL: PERHAPS IMPLIED, THIS REQUIREMENT DOES NOT STATE THAT YOU NEED THE COUNSELOR'S APPROVAL AHEAD OF TIME TO SELECT AND WORK ON THIS REQUIREMENT COMPONENT. PLEASE NOTE, AS WITH ANY REQUIREMENT, ACCEPTANCE IS AT THE DISCRETION AND SATISFACTION OF THE MERIT BADGE COUNSELOR.

Don't forget to bring your code and a device to share it on during the class.

This requirement must be reviewed with your merit badge counselor.

BE PREPARED!

REQUIREMENT 5b: With your counselor's approval, choose a second programming language and development environment, different from those used for requirement 5a and in a different industry from 5a. Then write, debug, and demonstrate a functioning program to your counselor, using that language and environment.

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This requirement must be reviewed with your merit badge counselor.

BE PREPARED!

REQUIREMENT 5c: With your counselor's approval, choose a third programming language and development environment, different from those used for requirements 5a and 5b and in a different industry from 5a or 5b. Then write, debug, and demonstrate a functioning program to your counselor, using that language and environment.

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Don't forget to bring your code and a device to share it on during the class.

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BE PREPARED!



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REQUIREMENT 5d: Explain how the programs you wrote for requirements 5a, 5b, and 5c process inputs, how they make decisions based on those inputs, and how they provide outputs based on the decision making.

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REQUIREMENT 6: Find out about three career opportunities that require knowledge in programming.

Career Opportunity #1:

Career Opportunity #2:

Career Opportunity #3:

REQUIREMENT 6: Pick one and find out the education, training, and experience required. Discuss this with your counselor.

Selected Career Opportunity:

Educational Requirements:

Training Requirements:

Experience Requirements:

REQUIREMENT 6: Explain why this career might be of interest to you.

Notes: