2025 STEM Academy

Merit Badge Prerequisites

Please remember to bring your Merit Badge Workbooks to the Academy.

Workbooks found here: http://usscouts.org/usscouts/mb/worksheets/list.asp

Some Merit Badges may have updated requirements that are not shown via the workbooks; find updated requirements here: https://www.scouting.org/program-updates/merit-badge-updates-for-2025/

Chess

Please bring a chess board if you have one.

Digital Technology

#1

#2a

#5b

#5c

#6 Pick 3, bring projects on a USB flash drive

#7c

8c

9a

Drafting

See separate file with more information on the Registration page.

#1 See Sample Copy 1

#2 Sample Copy 2

#3c See STEM blank border drawing; PDF'd drawing Sample Copy 3

6 See Sample Copy 4

#7.b 1, 2 and 3

#8

Follow all instructions titled Drafting Merit Badge Instructions.

WARNING on QCAD app: One trail is only good for 8 tries, each try lasts only 15 minutes! That is 2 hours total. Then you'll need to uninstall completely from your computer. Afterwards reinstall a fresh trial. If you read all tutorials first, you should have no reason to spend more than 4 hours with CAD.   Counselor recommendations: 1 hour to play various commands; next 3 hours to do your actual work.   Therefore work quickly as you can. Note ESCAPE command or ESC key does not work very well even multiple times; if all else fails, use RESET command to move from one command to another.

Engineering

#1-The Scout shall bring to the Academy a small, electric kitchen/bathroom appliance (toaster, electric skillet, hair dryer, etc.), that can be disposed of after the class, and a few tools in which to disassemble the appliance.

#2-The Scout shall bring to the Academy notes on their chosen engineering achievement and be prepared to stand up and present the details to the class in 5 minutes

#3-The Scout shall bring to the Academy notes on engineering.

#9-The Scout shall bring to the Academy notes on their chosen engineering opportunity and be prepared to stand up and present the details to the class in 5 minutes.

Game Design

#1a, 1b

#2 Pick 5 (five) from this list to discuss

#3

#4

#5

#6-#8 will be done in class.

Bring supplies to make your game: cardboard, markers, tokens, dice, etc.

* Please email the MBC your prerequisites, along with a question for a game designer, prior to class so she can review them: icepurplepenguin@gmail.com

Geology

#1

#2

#4

#5- option A will be done in class, part 5 of option A will be done before class

#6

Oceanography

#1

#2

#3

#4

#5

#6

#7

#8 Choose A or B

Personal Management

#1

#2b, 2c

#5

#6

#8

#9

#10

Programming

#1a

#5

- o Recommended languages: C#, Java, Javascript, Python, or VBasic.
- o Turn in program to Counselor before the Academy via email at sako@digitalsamurai.us, thumbdrive, upload, etc.
- o If Scouts use another language, they will need to provide the environment (i.e. laptop with necessary programs) to run it.
- o Will accept source code and a screen-cast demo of them running and debugging it (or other any evidence that Scouts actually ran and modified the program).

#6

Rifle Shooting

None

Weather

#2. Name five dangerous weather-related condition. Give the safety rules for each when out outdoors

- o Five (5) Conditions and Safety Rules
- o and explain the difference between a severe weather watch and a warning
- o Discuss the safety rules with your family - *requirement needs to be signed by Parent or Guardian showing that this has been completed*

#9. Do one of the following

A. Make one of the following instruments: wind vane, anemometer, rain gauge or hygrometer

- o Keep a weather log for one week use information from this instrument as well as from other sources…
- o Bring the instrument that you created with you.

B. Visit a National Weather Service or talk with a local radio or television weathercaster, private meteorologist, local agricultural extension service officer, or university meteorology instructor.

- o Requirement needs to be signed by the person you spoke to.

#10.   Give a talk of at least 5 minutes to a group (such as your unit or a Cub Scout pack) explaining the outdoor safety rules in the event of lighting, flash floods, and tornadoes.

- Before your talk, share your outline with your counselor for approval.

    - o Please email me at arlauckasmr@gmail.com for the outline for approval – MAKE SURE YOUR SCOUTMASTER, PARENT OR GUARDIAN IS ON THE SAME EMAIL.

    - o I WILL NOT OPEN AN EMAIL DIRECTLY FROM A SCOUT WITHOUT TWO DEEP LEADERSHIP ATTACHED

    - o Requirement needs to be signed by Scoutmaster, Cubmaster, Parent or Guardian showing that this has been completed