**MERIT BADGES**

[**ARCHAEOLOGY** 3](#_Toc113617464)

[**AVIATION** 3](#_Toc113617465)

[**CAMPING** 3](#_Toc113617466)

[**CITIZENSHIP IN THE NATION** 4](#_Toc113617467)

[**COLLECTIONS** 4](#_Toc113617468)

[**COMPOSITE MATERIALS** 4](#_Toc113617469)

[**CRIME PREVENTION** 6](#_Toc113617470)

[**DOG CARE** 6](#_Toc113617472)

[**ELECTRICITY** 6](#_Toc113617473)

[**ENGINEERING** 6](#_Toc113617474)

[**ENVIRONMENTAL SCIENCE** 7](#_Toc113617475)

[**EXPLORATION** 11](#_Toc113617476)

[**FIRST AID** 14](#_Toc113617477)

[**INDIAN LORE** 14](#_Toc113617478)

[**METALWORK** 15](#_Toc113617479)

[**MUSIC** 15](#_Toc113617480)

[**PROGRAMMING** 16](#_Toc113617481)

[**PUBLIC SPEAKING** 17](#_Toc113617482)

[**SEARCH AND RESCUE** 17](#_Toc113617483)

[**SIGNS SIGNALS AND CODES** 18](#_Toc113617484)

[**WOOD CARVING** 18](#_Toc113617485)

**NOTE**

Some pre-requisites require the Scout to contact the Merit Badge Counselor.

Don’t forget that two-deep leadership requirements apply to all contact. Be it by phone, text, email or other, include a parent/guardian/Scoutmaster.

When a Scout emails through their parent’s/guardian’s email account, they must copy a second parent/guardian/Scoutmaster on emails to ensure two-deep leadership is maintained.

**ARCHAEOLOGY**

**Archaeology:** These are new requirements this year as they updated the MB. # 4, 7, 8, 11. Number 10B will be done second session only

**AVIATION**

**4 per class - 1st Class and above only**

Looking at the requirements, the Scouts need to **write up and have with them when we meet,** the answers to the following questions:

1. A - E

5.

I do not want them to send it to me by email but have it with them when we meet.

We will do 2. B & C at the airport.

Must do 3. A or B before we meet.

We will satisfy 4.A by the Scouts coming to the airport.

I will not give credit to any Scout who does not have the written material with him or her. There is more than enough time to get the answers written down before we meet in March or April.

**CAMPING**

# 4b, 8c, 8d and 9 will NOT be covered at the MBC.

#3 and 4a must be done and brought into the first class.

3 Make a written plan 1 for an overnight trek and show how to get to your camping spot by using a topographical map and one of the following:

* 1. A compass
  2. A GPS receiver 2
  3. A smartphone with a GPS app 2..

4 Do the following:

* 1. Make a duty roster showing how your patrol is organized for an actual overnight campout. List assignments for each member.

**CITIZENSHIP IN THE NATION**

KOLVA Requirement 4:  Read each of the documents.

KOLVA Requirement 8:  Written   letter...not email.. is mandatory.

KOLVA Read:  Citizenship in the Nation merit badge book

**COLLECTIONS**

Pre-requisites for the Collection Merit Badge

1.       Prepare a short written report or outline for your counselor, giving a detailed description of your collection,\* including a short history. Be sure to include why you chose that particular type of collecting and what you enjoy and have learned from your collection.\*

Bring this short written report or outline to the first session

2.       Write a list the national, state, or local association responsive to your collection.  (What are the local, state and national association or groups that collect the same items in your collection?)

Preparations for the Collection Merit Badge (Be prepared)

Plan and be ready to explain the growth and development of your collection.

Plan and be ready to explain the precautions you need to take to preserve your collection, including (1) Handling (2) Cleaning (3) Storage

Plan and be ready to explain how best to display your collection, keeping in mind preserving as discussed above.

Plan and be ready to explain to your counselor the events available for a hobbyist of this collection, including shows, seminars, conventions, contests, and museum programs and exhibits.

Plan and be ready to discuss how investing and speculation would apply to your collection

Plan and be ready to discuss what you would look for in purchasing other collections similar to yours

Plan and be ready to discuss what you would expect in return value if you decided to sell all or part of the collection \*Stamp and coin collecting are excluded from eligibility for this merit badge.

Plan and be ready to discuss what with your counselor at least 10 terms commonly used in your collection and be prepared to discuss the definition of each.

Plan and be ready to show your counselor any two groups from your collection. Explain how you organized your collection and why you chose that method. (Note: If your collection is too large to transport and your counselor is unable to view your collection directly, photographs should be available to share.)

Plan and be ready to explain how your collection is valued by other collectors, and display to your counselor any price guides that may be available.

Plan and be ready to explain how your collection is graded for value, physical defects, size, and age. Show the various classifications or ratings used in your collection.

Plan and be ready to show the location of and explain to your counselor the identification number (if applicable), series, brand name (if any), and any other special identification marks.

Plan and be ready to discuss with your counselor the plans you have to continue with the collection in the future.

Plan and be ready to discuss with your counselor why and how collecting has changed and how this applies to your collection.

Research career opportunities in collecting. Pick one type of collection and find out the education, training, and experience required to have a profession in the field.

Plan and be ready to discuss this with your counselor, and explain why this profession might interest you

**COMPOSITE MATERIALS**

2a. Explain what are composite materials. Include a brief history of composites and how they have developed.

* 1. Find out about three career opportunities in composite materials. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.

**CRIME PREVENTION**

2, 4a AND 4b, 5, 6A, b, OR c, and 7.

**DOG CARE**

**Dog Care**: Pre Req:  #2, 4, 8

Can the scouts bring their dogs for this one? Several of the requirements are with their dog. If so, perhaps that could be the second session and outside?

**ELECTRICITY**

Electricity MB: #2, 8, 9a

**ENGINEERING**

**Requirement 2:**(For first session)  Select an engineering achievement that has had a major impact on society. Using resources such as the Internet (with your parent's permission), books, and magazines, find out about the engineers who made this engineering feat possible, the special obstacles they had to overcome, and how this achievement has influenced the world today. Tell your counselor what you have learned.

**Requirement 9:** (For Second Session) Find out about three career opportunities in engineering. Pick one and research the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.

**ENVIRONMENTAL SCIENCE**

**Please complete the following by March 10**

**Requirement 1: Prepare an environmental science timeline showing contributions to**

**America. Include:**

**-dates**

**-names or people or organizations**

**-important events including contributions made by the Boy Scouts of America**

**-Be prepared to share your timeline in class.**

**Requirement 2: Define the terms listed in your merit badge book:**

**-population -air shed**

**-biosphere -endangered species**

**-fuel cell -extinction**

**-community -pollution prevention**

**-symbiosis -brownfield**

**-conservation -threatened species**

**-ecosystem -watershed**

**-niche** -nonpoint source

-hybrid vehicle -habitat

-ozone

We will discuss this in class so please be prepared.

-Req #3 A- Ecology (#3): We will go over this in class together. Be prepared for the discussion.

-Req #3 Part B- Air Pollution (#2). Trips in 7 days to learn about fuel consumption and how to save on the fuel.

-Req # 3 Part C- Water Pollution: Pick one of the items listed in your merit bade book to complete and report

back to us on your findings.

-Req #3 Part D- Land Pollution: Pick one of the items listed in your merit bade book to complete and report

back to us on your findings.

-Req #3 Part E- Endangered Species( #1): Prepare a 100 word written/typed report on 1 endangered species in

PA.

(Note: species does not necessarily mean and animal!)

-Include:

-Natural habitat

-Why it is endangered?

-What is being done to preserve/safe it?

-How many organisms are left in the WILD?

-Be prepared to read and share your reports in April.

-Req #3 Part F- Pollution Prevention, Resource Recovery, and Conservation (#2): By looking around your

house or school find and record 10 way to conserve resources. Then practice conserving 2 of the methods for one week.

-Be prepared to share what you found and which methods you tried in class.

-Req #3 Part G- Pollination: Pick one of the items listed in your merit bade book to complete and report back to

us on your findings. (NOTE: If you are allergic to bees DO NOT do 3 G part 3!!!)

-Req #3 Part H- Invasive Species: Pick one of the items listed in your merit bade book to complete and report

back to us on your findings.

Requirement 4 B: Two outdoor study area plots that are very different from each other.

(examples: hilltop vs bottom of hill, field vs forest, swamp vs dry land)

-Be sure to **START THIS EARLY**!!! Don’t wait until the ground is frozen!

-You need to make 3 visits to each study plot.

-Be sure to space them at least one week apart.

-You are required to stay at least 20 minutes at each location to observe

the living and non-living plants of your ecosystem.

-Take notes in a notebook to note the differences between

the two plots and the different times you visited.

-I encourage you to take pictures of your plots to share with us in March.

-Be prepared to share information about your study plots in class.

-Req #5: We will do together in class in April.

-Req #6: Find 3 careers in Environmental Science.

-Pick ONE that interests you as a possible career and further investigate it to find out:

-What education is needed for this career?

-What training is required?

-What experience is needed?

-Be prepared to discuss your career choice in class and explain why that career interested you.

**EXPLORATION**

1. **General Knowledge.**  
   Do the following:
   1. Define exploration and explain how it differs from adventure travel, trekking or hiking, tour-group trips, or recreational outdoor adventure trips.
   2. Explain how approaches to exploration may differ if it occurs in the ocean, in space, in a jungle, or in a science lab in a city.
2. **History of Exploration.**  
   Discuss with your counselor the history of exploration. Select a field of study with a history of exploration to illustrate the importance of exploration in the development of that field (for example, aerospace, oil industry, paleontology, oceanography, etc.).
3. **Importance of Exploration.**  
   Explain to your counselor why it is important to explore. Discuss the following:
   1. Why it is important for exploration to have a scientific basis
   2. How explorers have aided in our understanding of our world
   3. What you think it takes to be an explorer
4. **Real-Life Exploration.**  
   Do ONE of the following:
   1. Learn about a living explorer. Create a short report or presentation (verbal, written, or multimedia slide presentation) on this individual's objectives and the achievements of one of the explorer's expeditions. Share what you have learned with your counselor and unit.
   2. Learn about an actual scientific exploration expedition. Gather information about the mission objectives and the expedition's most interesting or important discoveries. Share what you have learned with your counselor and unit. Tell how the information gained from this expedition helped scientists answer important questions.
   3. Learn about types of exploration that may take place in a laboratory or scientific research facility (medicine, biology, chemistry, physics, astronomy, etc.). Explain to your counselor how laboratory research and exploration are similar to field research and exploration.
5. **Exploration in Lab and Field.**  
   Do ONE of the following, and share what you learn with your counselor:
   1. With your parent's permission and counselor's approval, visit either in person or via the internet an exploration sponsoring organization (such as The Explorers Club, National Geographic Society, Smithsonian Institution, Alpine Club, World Wildlife Fund, or similar organization). Find out what type(s) of exploration the organization supports.
   2. With permission and approval, visit either in person or via the internet a science lab, astronomical observatory, medical research facility, or similar site. Learn what exploration is done in this facility.
6. **Expedition Planning.**  
   Discuss with your counselor each of the following steps for conducting a successful exploration activity. Explain the need for each step.
   1. Identify the objectives (establish goals).
   2. Plan the mission. Create an expedition agenda or schedule. List potential documents or permits needed.
   3. Budget and plan for adequate financial resources. Estimate costs for travel, equipment, accommodations, meals, permits or licenses, and other expedition expenses.
   4. Determine equipment and supplies required for personal and mission needs for the length of the expedition.
   5. Determine communication and transportation needs. Plan how to keep in contact with your base or the outside world, and determine how you will communicate with each other on-site.
   6. Establish safety and first aid procedures (including planning for medical evacuation). Identify the hazards that explorers could encounter on the expedition, and establish procedures to prevent or avoid those hazards.
   7. Determine team selection. Identify who is essential for the expedition to be successful and what skills are required by the expedition leader.
   8. Establish detailed recordkeeping (documentation) procedures. Plan the interpretation and sharing of information at the conclusion of the expedition.
7. **Prepare for an Expedition.**  
   With your parent's permission and counselor's approval, prepare for an actual expedition to an area you have not previously explored; the place may be nearby or far away. Do the following:
   1. Make your preparations under the supervision of a trained expedition leader, expedition planner, or other qualified adult experienced in exploration (such as a school science teacher, museum representative, or qualified instructor).
   2. Use the steps listed in requirement 6 to guide your preparations. List the items of equipment and supplies you will need. Discuss with your counselor why you chose each item and how it will be of value on the expedition. Determine who should go on the expedition.
   3. Conduct a pre-expedition check, covering the steps in requirement 6, and share the results with your counselor. With your counselor, walk through the Sweet Sixteen of BSA Safety for your expedition. Ensure that all foreseeable hazards for your expedition are adequately addressed.
8. **Go on an Expedition.**  
   Complete the following:
   1. With your parent's permission and under the supervision of your merit badge counselor or a counselor-approved qualified person, use the planning steps you learned in requirement 6 and the preparations you completed in requirement 7 to personally undertake an actual expedition to an area you have not previously explored.
   2. Discuss with your counselor what is outdoor ethics and its role in exploration and enjoying the outdoors responsibly.
   3. After you return, compile a report on the results of your expedition and how you accomplished your objective(s). Include a statement of the objectives, note your findings and observations, include photos, note any discoveries, report any problems or adverse events, and have a conclusion (whether you reached your objective or not). The post-expedition report must be at least one page and no more than three; one page can be photos, graphs, or figures.
9. **Career Opportunities.**  
   Identify three career opportunities in exploration. Pick one and explain to your counselor how to prepare for such a career. Discuss what education and training are required, and why this profession might interest you.

**FIRST AID**

Bring your req. 2d with you preferably to the first meeting.

 We will be doing req. 6 a and b and also req.7 in the classroom.

 I encourage the reading of the merit badge book before the first MB College meeting.

**INDIAN LORE**

**Prerequisites for the Indian Lore Merit Badge**

Prepare to g**ive the history of one American Indian tribe, group, or nation that lives or has lived near you.**

Visit it, if possible. Tell about traditional dwellings, way of life, tribal government, religious beliefs, family and clan relationships, language, clothing styles, arts and crafts, food preparation, means of getting around, games, customs in warfare, where members of the group now live, and how they live.

Prepare, make or visit and bring **TWO of the following.  Focus on a specific group or tribe.**

**a. Make an item of clothing worn by members of the tribe.**

**b. Make and decorate three items used by the tribe, as approved by your counselor. (MUST Call or email MB Counselor before starting this)**

**c. Make an authentic model of a dwelling used by an Indian tribe, group, or nation.**

**d. Visit a museum to see Indian artifacts. Discuss them with your counselor. Identify at least 10 artifacts by tribe or nation, their shape, size, and use. (Have supporting pictures)**

Plan, do and prepare **ONE of the following to share with the MB Counselor.**

**a. Learn three games played by a group or tribe. Be prepared to teach and lead one game with the Scout group.**

**b. Learn and show how a tribe traditionally cooked or prepared food.  Make three food items bring pictures of what was made.**

**c. Give a demonstration showing how a specific Indian group traditionally hunted, fished, or trapped.**

**Preparations for the Indian Lore Merit Badge (Be prepared)**

Identify the different American Indian cultural areas. Explain what makes them each unique.

Write or briefly describe how life might have been different for the European settlers if there had been no native Americans to meet them when they came to this continent.

Be prepared to do one of the following and share with the MB Counselor and Scouts:

Sing two songs in an Indian language. Explain their meanings.

Learn in an Indian language at least 25 common terms and their meanings.

Show 25 signs in Indian sign language. Include those that will help you ask for water, for food, and where the path or road leads.

Learn an Indian story of up to 300 words (or several shorter stories adding up to no more than 300 words). Tell the story or stories at a Scout gathering or campfire.

Write or tell about eight things adopted by others from American Indians.

Learn 25 Indian place names. Tell their origins and meanings.

Name five well-known American Indian leaders, either from the past or people of today. Give their tribes or nations. Describe what they did or do now that makes them notable.

Attend a contemporary American Indian gathering. Discuss with your counselor what you learned and observed. Include in your discussion any singing, dancing, drumming, and the various men’s and women’s dance styles you saw.

**METALWORK**

1. Read the safety rules for metalwork  Discuss how to be safe while working with metal. Discuss with your counselor the additional safety rules that apply to the metalwork option you choose for requirement 5.
2. Define the terms native metal, malleable, metallurgy, alloy, nonferrous, and ferrous. Then do the following:
   1. Name two **nonferrous** alloys used by pre-Iron Age metalworkers. Name the metals that are combined to form these alloys.
   2. Name three ferrous alloys used by modern metalworkers.
   3. Describe how to **work–harden** a metal.
   4. Describe how to **anneal** a non-ferrous and a ferrous metal.
3. Find out about three career opportunities in metalworking. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.

**MUSIC**

For. 1  choose and bring the song or hymn you wish to sing or play.

For req. 3  bring evidence that you have done a. or and c.  If you choose to do  req. 3b do that preferably before the first MB College meeting.  If you choose to do req. 3d complete that before the first MB College meeting.   It is your choice which two (of 4) portions of req. 3 you do.

 Requirement 4 is another choice you must consider.  We can do req. 4a during the MB College time.   Bring the 3 songs if you choose that requirement during our class time.

You could do one of the other requirements but they must be done before the first MB College meeting.

 I always encourage the reading of the entire merit badge book before the first MB College meeting.

**PROGRAMMING**

Before the first session.

1. a. Show your counselor your current, up-to-date Cyber Chip.

6.  Careers. Find out about three career opportunities that require knowledge in programming. Pick one and find out the education, training, and experience required. Discuss this with your counselor and explain why this career might be of interest to you.

By the end of the second session.

5.  Projects. Do the following:

1. 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.
2. 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.
3. 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.
4. 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.

Scouts should bring a device on which to run the programs that they write.  If they do not have a device which they can bring, they need to make arrangement with me so I can check their programs before the last session.  To earn the merit badge, the three programs need to be written in three different programming languages and be used in three different industries.

**PUBLIC SPEAKING**

Be prepared for requirements 1,2,4 and 5

**Prior to session 1**: send five (5) subjects of interest to counselor, one will be selected during session for req 3

**SEARCH AND RESCUE**

In order to take the Search and Rescue (SAR) Merit Badge training at the 2023 Merit Badge College Scouts must:

A. Be at least a First Class Scout in rank

B. Have already completed the 1st Aid Merit Badge

In addition, Scouts must complete the following prerequisites and present the written reports to your counselor on the **first day of class** at the Merit Badge College:

1. **Read the Search and Rescue Merit Badge Pamphlet** and complete the following Requirements:  
• Requirement 1.b. in written report   
• Requirement 2.c. in written report: What are the Ten Essentials and how are they similar to a “Ready Pack”?   
• Requirement 3. in written report   
• Requirement 4. in written report   
• Requirement 5. View the following video link and be ready to discuss in class the 1st day: http://training.fema.gov/emiweb/downloads/ics100.ppt   
• Requirement 10. in written report

2. Additional Info:   
• On the 1st day of class you will be assigned a hypothetical scenario to complete Requirement #8. This homework will be due at the beginning of the last day of class.   
• On the last day of class we will, as a class, complete Requirement #9 by conducting an outside Search & Rescue exercise in the fields and woods surrounding the Merit Badge College . This will be conducted regardless of the weather conditions that day (exception would be hazardous weather, i.e. thunderstorms or high winds). Scouts must dress accordingly.

3. If you have any questions or comments regarding the SAR Merit Badge you may contact your counselor via Email at: Shoefly@embarqmail.com, Attn: Mr. Shouey

**SIGNS SIGNALS AND CODES**

**#7 since it must be on a scout outing.**

**WOOD CARVING**

**Bring your up to date Totin’ Chip to the first class**

**Buy and bring a woodcarving kit . You can get this from the Scout Shop.**