

Bethel Matrix

<p><b>American Heritage</b> Sessions: B <i>See prework</i></p>	<p><b>Architecture</b> Sessions: C <i>See prework</i></p>	<p><b>Art</b> Sessions: B</p>
<p><b>Chemistry</b> Sessions: A,B Additional fee <i>See prework</i> <i>Scouts 13 and over</i></p>	<p><b>Chess</b> Sessions: A,B A-Experienced; B-Beginner <i>See prework</i></p>	<p><b>Citizenship...Nation*</b> Sessions: A,B,C <i>See prework</i> <i>Scouts 14 and over</i></p>
<p><b>Citizenship...World*</b> Sessions: A,B,C 8th grade and above <i>See prework</i></p>	<p><b>Coin Collecting</b> Sessions: A <i>See prework</i></p>	<p><b>Collections</b> Sessions: C <i>See prework</i> Stamp &amp; Coin Collecting are excluded</p>
<p><b>Communication*</b> Sessions: A,B,C <i>See prework</i> <i>Scouts 13 and over</i></p>	<p><b>Cooking*</b> Sessions: A-B Limit 16 Scouts; Tenderfoot or above; \$15 fee <i>See prework</i></p>	<p><b>Crime Prev &amp; Fingerprinting</b> Sessions: A,B Combined class-two MBs in one! Both MBs taken in one session</p>
<p><b>Digital Technology</b> Sessions: A <i>See prework</i> <i>First Class or above</i> CyberChip required</p>	<p><b>Dog Care</b> Sessions: B February 9 only (with Pets &amp; Vet Med) <i>See prework</i> Start 60 days prior to class</p>	<p><b>Electricity</b> Sessions: C <i>See prework</i></p>
<p><b>Electronics</b> Sessions: A-B <i>See prework</i> <i>Scouts 13 and over</i> Additional fee; need own tools</p>	<p><b>Family Life*</b> Sessions: A,B,C <i>See prework</i> Start 90 days prior</p>	<p><b>Farm Mechanics</b> Sessions: C <i>See prework</i></p>
<p><b>Fire Safety</b> Sessions: B,C <i>See prework</i></p>	<p><b>Game Design</b> Sessions: A,B,C <i>See prework</i></p>	<p><b>Genealogy</b> Sessions: C <i>See prework</i></p>
<p><b>Landscape Architecture</b> Sessions: A</p>	<p><b>Law</b> Sessions: A <i>See prework</i> <i>Scouts 14 and over</i></p>	<p><b>Leatherwork</b> Sessions: C February 9 &amp; 23 only \$8 additional fee</p>
<p><b>Life-to-Eagle Workshop</b> Sessions: A Life Scouts and parents only</p>	<p><b>Medicine</b> Sessions: C <i>See prework</i></p>	<p><b>Model Design &amp; Building</b> Sessions: A <i>See prework</i></p>

<p><b>Nuclear Science</b> Sessions: C Scouts should be familiar with the subject <i>See prework</i></p>	<p><b>Personal Management*</b> Sessions: A,B <i>See prework-90 days prior Scouts 13 and over</i></p>	<p><b>Pets</b> Sessions: A February 9 only (with Dog Care &amp; Vet Med) <i>See prework</i> <i>Start 4 months prior</i></p>
<p><b>Photography</b> Sessions: A <i>See prework-cell phone &amp; tablets will not meet the requirements</i></p>	<p><b>Programming</b> Sessions: A</p>	<p><b>Public Speaking</b> Sessions: B <i>See prework</i></p>
<p><b>Pulp &amp; Paper</b> Sessions: A <i>See prework</i> <i>Additional fees</i></p>	<p><b>Radio</b> Sessions: B <i>See prework</i></p>	<p><b>Reading</b> Sessions: B <i>See prework</i></p>
<p><b>Robotics</b> Sessions: A-B Limit 8 Scouts <i>See prework</i> <i>Scouts 13 and over; \$10 additional fees</i></p>	<p><b>Safety</b> Sessions: A <i>See prework</i></p>	<p><b>Scouting Heritage</b> Sessions: C <i>See prework</i></p>
<p><b>Search &amp; Rescue</b> Sessions: A-B <i>See prework</i></p>	<p><b>Surveying</b> Sessions: A Limit 5 Scouts <i>See prework</i> <i>Scouts 13 and over</i></p>	<p><b>Sustainability*</b> Sessions: A,B <i>See prework</i></p>
<p><b>Traffic Safety</b> Sessions: C Driving age or older</p>	<p><b>Veterinary Medicine</b> Sessions: C February 9 (with Pets and Dog Care)</p>	<p><b>Weather</b> Sessions: C <i>See prework</i></p>
<p><b>Welding</b> Sessions: A,B,C Limit 8 each class <i>See prework</i></p>	<p><b>Wood Carving</b> Sessions: A,B \$5 additional fee Must have Toten' Chip; Additional fee; Limit 15 Scouts</p>	<p>Sessions:</p>

Sessions:



This document contains the required Merit Badge prework and class fees for  
**Bethel Merit Badge Challenge 2019**

Prework: The Prework is to be completed *BEFORE* the first day of Merit Badge Challenge. Specific items are listed by merit badge that the Scout needs to complete and bring the first Saturday. Some are time dependent and need to be started upon receipt of this document.

ALL MERIT BADGE CLASSES REQUIRE READING THE MERIT BADGE PAMPHLET BEFORE CLASS.

### **Impact of Plagiarism:**

Scouts are highly encouraged to use the Internet as an aid to earn merit badges (with parental permission).

This information should then be written by the Scout in his own words. Direct copying can result in the counselor returning the work as unacceptable.

Fees: Some merit badges have fees for supplies or materials and are noted throughout this document. Merit badge class fees are to be paid to the counselor on the first day of class.

### **Merit Badge Prerequisites, Fees, and Age/Maturity Requirements**

Merit Badges are in alphabetical order.

#### **AMERICAN HERITAGE**

**Prework:** Requirement #2a: Select two individuals from American history, one a political leader (a president, senator, etc.) and the other a private citizen (a writer, religious leader, etc.). Find out about each person's accomplishments and compare the contributions each has made to America's heritage.

#### **ARCHITECTURE**

**Prework:** Requirement #1b- Select an architectural 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 how this achievement has influenced the world today. Tell your counselor what you learned.

Complete requirement #4 and **bring to class on the first Saturday**. Measure your bedroom. Make an accurately scaled drawing of the floor plan indicating walls, doors, windows, and furniture. Neatly label your drawing, including name, Troop number and date. (Drawing scale: 1/4" = 1 foot). **Hint: Refer to and use the symbols found in the Architecture Merit Badge pamphlet.**

#### **ART**

## **CHEMISTRY**

**Prework:** Complete Requirement #5. List the four classical divisions of chemistry. Briefly describe each one, and tell how it applies to your everyday life.

## **CHESS**

Note: SCOUTS ATTENDING SESSION B NEED TO BE EXPERIENCED AT PLAYING CHESS TO COMPLETE THIS BADGE. Session A is for beginners.

**Prework:** Complete Req. #1: Discuss with your merit badge counselor the history of the game of chess. Explain why it is considered a game of planning and strategy.

Complete Req. #2: Discuss with your merit badge counselor the following:

- a. The benefits of playing chess, including developing critical thinking skills, concentration skills, and decision-making skills, and how these skills can help you in other areas of your life.
- b. Sportsmanship and chess etiquette.

## **CITIZENSHIP IN THE NATION**

**Prework:** Complete Requirement #8: Name your two U.S. Senators and the member of Congress from your Congressional District. Write a letter to one of these elected officials on a national issue, sharing your view with him or her. Show your letter and any response to your counselor.

**Bring list of elected officials and a copy of the letter to first class meeting. (It is suggested that a parent read your letter before mailing.)**

Complete Requirement

2. Do 2 of the following:

- (a) Visit a National Historic Landmark or that is on the National Register of Historic Places,
- (b) Tour your state capitol or the U.S. Capitol,
- (c) Tour a federal facility,
- (d) Choose a national monument that interests you and find out more about it.

**Bring the names of the places, the dates you went, what you saw there and why it is important to the first Saturday class. Make sure your name and troop number are on the paper.**

## **CITIZENSHIP IN THE WORLD**

**Prework:** Requirements 4(c) and 7 (a) and (b).

Requirement 7. Do any two of the five.

Each requirement above should have at least a 100-word report to be turned in at the first session.

## **COIN COLLECTING**

**Prework:** Complete Requirements #2a–f in written form and #5a and #5b in written form . Please be sure to include your name, Troop, and District on your paper. Bring to class on the first Saturday.

Begin Requirements #6, #7, and #9.

For Requirement #8, do the following:

- a) Identify the people depicted on the following denominations of current U.S. paper money: \$1, \$2, \$5, \$10, \$20, \$50, and \$100.
- b) Explain “legal tender.”

c) Describe the role the Federal Reserve System plays in the distribution of currency.

## **COLLECTIONS**

**Prework:** Requirement #1: Prepare a short written report 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.

Note: Collections used for Stamp Collection and Coin Collecting are excluded from eligibility for this merit badge.

## **COMMUNICATION**

**Prework:** Requirement #5: Attend a public meeting (city council, school board, debate) approved by your counselor where several points of view are given on a single issue. Practice active listening skills and take careful notes of each point of view. Present an objective report that includes all points of view that were expressed, and share this with your counselor.

Complete Requirement #8: Plan a troop or crew court of honor, campfire program, or interfaith worship service. Have the patrol leaders' council approve it, then write the script and prepare the program. Serve as master of ceremonies.

## **COOKING**

**\$15 additional fee for food that will be purchased during Challenge.**

**Prework:** The requirements for this merit badge have been updated and require considerable effort to complete requirements outside on campouts. Scouts should review the merit badge pamphlet and the requirements carefully. \*Note: The meals prepared for Cooking merit badge requirements 5, 6, and 7 will count only toward fulfilling those requirements and will not count toward rank advancement. Meals prepared for rank advancement may not count toward the Cooking merit badge. You must not repeat any menus for meals actually prepared or cooked in requirements 5, 6, and 7. Requirement #1, #2, #3, #4 Research these requirements! Requirement #5: Using the MyPlate food guide or the current USDA nutrition model, plan a menu for three full days of meals (three breakfasts, three lunches, and three dinners) plus one dessert. Your menu should include enough to feed yourself and at least one adult, keeping in mind any special needs (such as food allergies) of those to be served. List the equipment and utensils needed to prepare and serve these meals.

Requirement #6: Using the MyPlate food guide or the current USDA nutrition model, plan a menu for your patrol or a similar size group of up to eight youth, including you) for a camping trip. Include five meals AND at least one snack OR one dessert. List the equipment and utensils needed to prepare and serve these meals.

Requirement #7: Using the MyPlate food guide or the current USDA nutrition model, plan a menu for trail hiking or backpacking that includes one breakfast, one lunch, one dinner, and one snack. These meals must not require refrigeration and are to be consumed by three to five people (including you). List the equipment and utensils needed to prepare and serve these meals. Then do the following: You may do this before first session or between sessions. You do not need to do a backpacking trip to complete this. Take a short hike with your leaders or parents. Take pictures and bring your documentation.

## **CRIME PREVENTION and FINGERPRINTING (combined class)**

**Prework:** Requirement #2: *Prepare a journal from various sources that address crime and crime prevention efforts in your community.*

Requirement #7: Do **ONE** of the following: (a) Assist in the planning and organization of a crime prevention program in your community such as Neighborhood Watch, Community Watch, or Crime Stoppers. Explain how this program can benefit your neighborhood. **OR** (b) With your parent's and counselor's approval, visit a jail or detention facility or a criminal court hearing. Discuss your experience with your counselor.

## **DIGITAL TECHNOLOGY**

**Prework:** Complete Requirement #1 and bring your current, up-to-date Cyber Chip card to class on the 1<sup>st</sup> Saturday.

Complete Requirement #2a: Give a brief report on the history of the changes in digital technology over time. (In your report) discuss with your counselor how digital technology in your lifetime compares with that of your parents', grandparents', or other adult's lifetime.

Complete Requirement #2b: Describe the kinds of computers or devices you imagine might be available when you are an adult.

Requirement #6: Choose three of the project options, copy files to a backup device and share the finished projects with the counselor by the second Saturday.

## **DOG CARE**

### **ELECTRICITY**

**Prework:** Complete Requirement #8: On a floor plan of a room in your house, make a wiring diagram of lights, switches and outlets. Show which fuse or circuit breaker protects each one.

Use the information in the Electricity Merit Badge pamphlet. ***Bring diagram to class on the first Saturday.***

Be prepared to explain the following electrical terms: volt, ampere, watt, ohm, resistance, potential difference, rectifier, rheostat, conductor, ground, circuit, and short circuit. ***Hint: Study the merit badge book, pages 28 thru 31.***

### **ELECTRONICS**

**Prework:** Scouts will purchase/secure the Electronics Merit Badge pamphlet in advance and have it available at all classes.

1. Scouts will purchase/secure the following miniature electronics tools: Needle nose pliers, side cutting pliers, straight blade screwdriver, Phillips head screwdriver, and wire stripper.
2. Scouts will purchase/secure a solder wicking, a small spool of #18 or #20 wire, a 15-watt electronics soldering iron, and a small roll of 60/40 rosin core solder.

Complete Requirement #6: Find out about three career opportunities in electronics that interest you. Discuss with and explain to your counselor what training and education are needed for each position.

### **FAMILY LIFE**

**Prework:** Start on Requirement #3 **immediately**: Prepare a list of your regular home duties or chores (***at least five***) and do them for 90 days. Keep a record of how often you do each of them. Suggest using table in Family Life Merit Badge pamphlet. ***Note: Do not include such items as sports, practicing, homework, etc. as duties.***



Requirements 4, 5, 6)

Note: This merit badge covers mature subject matter, i.e., premarital sex, abstinence, becoming a parent, etc. It is recommended for Scouts age 14 and over.

## **FARM MECHANICS**

**FINGERPRINTING (See CRIME PREVENTION – these are combined into one class)**

## **FIRE SAFETY**

**Prework:** Read the Home Safety pages in the Fire Safety Merit Badge pamphlet.

Complete the following portion of Requirement #6: Conduct a home safety survey with the help of an adult. Use of forms in the merit badge pamphlet is suggested.

Complete Requirement #6a: Draw a home fire escape plan, create a home fire drill schedule, and conduct a home fire drill. See example in merit badge pamphlet.

Bring both the survey and escape plan to class on the first Saturday.

## **GAME DESIGN**

**Prework:** Requirement #5: Design a new game. Any game medium or combination of mediums is acceptable.

Requirement #6.

Record your work in a game design notebook.

a. Write a vision statement for your game. Identify the medium, player format, objectives, and theme of the game. If suitable, describe the setting, story, and characters.

b. Describe the play value.

c. Make a preliminary list of the rules of the game. Define the resources. d.

Draw the game elements.

***Do not begin creating prototype.*** You must have your merit badge counselor's approval of your concept before you begin creating the prototype.

Note: If you design a video game, you will need to complete the programming for the game so that it can actually be played by the counselor and others in order to meet the requirement.

## **GENEALOGY**

**Prework:** Requirement #4b: Obtain at least one genealogical document showing proof of some information on your pedigree chart or family group records. This document may be located in your home, a courthouse, an archive or library, etc.

Bring at least one genealogical document (copy preferred) showing proof of some information that will be on your family chart, e.g. birth certificate, marriage certificate, death certificate; to class on the first Saturday.

Also bring to the class on the first Saturday a list of your family (parents, siblings, grandparents, aunts, uncles, etc.) including known dates of birth, marriage, and death.

Complete Requirement #9: Plan a geohunt for a youth group such as your troop or a neighboring pack, at school, or your place of worship. Choose a theme, set up a course with at least four waypoints, teach the players how to use a GPS unit, and play the game. Tell your counselor

about your experience, and share the materials you used and developed for this event.

Each Scout should have a GPS Device to bring to class.

## LANDSCAPE ARCHITECTURE LAW

**LEATHERWORK - \$8 additional fee for leatherwork kits**

## LIFE TO EAGLE WORKSHOP

## MEDICINE

**Prework:** do 7a

Complete Requirement #2: Explain the Hippocratic Oath to your counselor, and compare the original version to a more modern one. Discuss to whom those subscribing to the original version of the oath owe the greatest allegiance.

## MODEL DESIGN & BUILDING

## NUCLEAR SCIENCE

Recommended age 13 and up

## PERSONAL MANAGEMENT

**Prework:** *Immediately* start Requirement #2a: Prepare a budget reflecting your expected income (allowance, gifts, wages,), expenses, and savings. Track your actual income, expenses, and savings for 13 consecutive weeks. (*It is suggested you use the forms provided in the Personal Management Merit Badge pamphlet.*)

**Note:** Budget must be prepared BEFORE tracking actual income and expenses.

## PETS

## PHOTOGRAPHY

**Note:** Bring digital camera to first class. (NO camera phones/tablets.)

**Prework:** This merit badge requires the Scout to provide photographs of their own, specifically made for completion of the requirements; access to a digital camera with versatile controls is strongly recommended.

Completion of the Cyber Chip is the first requirement of this merit badge. Therefore, submitting work via email is highly recommended. With adult help, the Scout should send an email addressed to: [photo.mbc.sycamore@gmail.com](mailto:photo.mbc.sycamore@gmail.com) Within the email, include first and last names and Troop number; provide the scout's writing and/or attachments for the following:

Complete Requirement 1: Safety. Do the following:

- a. Explain the most likely hazards you may encounter while working with photography and what you should do to anticipate, mitigate, prevent, and respond to these hazards. Explain how you would prepare for exposure to environmental situations such as weather, sun, and water.
- b. Attach a picture of your current and up-to-date Cyber Chip card.

Complete Requirement 3: Discuss with your counselor the differences between a film camera and a digital camera. Describe how computer software allows you to make adjustments to a digital photograph after it is taken.

Complete Requirement 8: Careers. Do the following:

Identify three career opportunities in photography. 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.

Discussion should be typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

## **PROGRAMMING**

### **PUBLIC SPEAKING**

**Prework:** Preparation for Requirement #1: Give a three- to five-minute introduction of yourself to an audience such as your troop, class at school, or some other group. ***Be prepared to give an impromptu talk of at least 2 minutes at the first session, as well as give a 3-5 minute introductory talk about yourself.***

Scouts must have read the Public Speaking Merit Badge pamphlet and bring it to class on the first Saturday.

### **PULP AND PAPER**

Cost: \$2.50 for papermaking kit

There will be a field trip outside the regular MBC meeting times (Requirement #7).

**Prework:** Requirement #6: Make a list of 15 pulp or paper products in your home. Share samples of 10 such products. ***Bring list and products to first class on Saturday.***

## **RADIO**

## **READING**

### **ROBOTICS**

**Important note:** The Robotics Merit Badge requires the ability to logically program your robot. Counselors recommend previous exposure to programming to be successful with this badge. ***While assistance will be given, counselors will not be teaching programming skills.***

Cost: \$5 to cover replacement of materials in robotics kit.

**Prework:** Complete Requirement #1: **Safety.** Do the following:

- a. Explain the most likely hazards you may encounter while working with robots and what you should do to anticipate, mitigate and prevent, and respond to these hazards. Describe the appropriate safety gear and clothing that should be used when working with robotics.
- b. Discuss first aid and prevention for the types of injuries that could occur while participating in robotics activities and competitions, including cuts, eye injuries, and burns (chemical or heat).

Complete Requirements #2a and #2b. **Robotics Industry.** Discuss the following:

- a. The kinds of things robots can do and how robots are best used today.
- b. The similarities and differences between remote-control vehicles, telerobots, and autonomous robots.

Complete Requirement #3: **General Knowledge.** Discuss with your counselor three of the five major fields of robotics (human-robot interface, mobility, manipulation, programming, sensors) and their importance to robotics development. Discuss either the three fields as they relate to a

single robot system OR talk about each field in general. Find pictures or at least one video to aid in your discussion.

Complete Requirement #7: **Careers**. Name three career opportunities in robotics. 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.

Bring completed requirements in written form to class the first Saturday. Each discussion topic should be in your own words, typed, and a minimum of 200 words. Be sure to include your name, Troop, and District on the first page.

## **SAFETY**

## **SCOUTING HERITAGE**

## **SEARCH AND RESCUE**

## **SURVEYING**

**Prework:** Read the MB Pamphlet and be prepared to discuss Requirements #1, #7, and #8. Recommended for Scouts age 12 and up.

Dress warm as we will be doing some work outside.

## **SUSTAINABILITY**

**Prework:** Complete Requirement #1: Before starting work on any other requirements for this merit badge, write in your own words the meaning of sustainability. Explain how you think conservation and stewardship of our natural resources relate to sustainability. Have a family meeting, and ask family members to write down what they think sustainability means. Be sure to take notes. You will need this information again for Requirement #5.

## **TRAFFIC SAFETY**

## **VETERINARY MEDICINE**

## **WEATHER**

**Prework:** Requirement #9: Do ONE of the following:

a. Make one of the following instruments: wind vane, anemometer, rain gauge, and hygrometer. Keep a daily weather log for one week using information from this instrument as well as from other sources such as local radio and television stations or NOAA Weather Radio. The following information should be recorded at the same time every day: wind direction and speed, temperature, precipitation, and types of clouds. Be sure to make a note of any morning dew or frost. In the log, also list the weather forecasts from radio or television at the same time each day and show how the weather really turned out.

Bring log and weather instrument to class on the first Saturday.

b. Visit a National Weather Service office or talk with a local radio or television weathercaster, private meteorologist, local agricultural Extension service office, or university meteorology instructor. Find out what type of weather is most dangerous or damaging to your community. Determine how severe weather and flood warnings reach the homes in your community.

Obtain a signed note on the stationery of the office visited that you completed this requirement and bring to the first class on Saturday.

Start Requirement #10a or 10b by completing the outline mentioned in this requirement. Bring a copy of the written outline to the first meeting for approval by the Counselor.

Complete Requirements #1-#5: These requirements must be completed before Scouts can participate in an off-site lab of about 4 hours where Scouts will perform welding in a shop environment. The off-site lab is required to complete the merit badge.

## **WELDING**

### **WOOD CARVING**

Cost: \$15.00 for carving knife

**Prework:** BRING TOTIN' CHIP CARD EACH SATURDAY.

Read the Wood Carving Merit Badge pamphlet before the first session.

**Note:** Recommended age 13 Sufficient hand strength and manual dexterity is required to be successful with this merit badge.