

PREWORK

This document contains the required Merit Badge prework and class fees for Merit Badge Challenge 2018 for all locations. (Bethel, Northern Kentucky, Fairfield, and Sycamore)

Please Note: Not all merit badges shown below are offered at each event. Requirements reflect those found in the 2017 BSA Requirement Book, and are to be used for the MBC 2018.

Pework: The Pework 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 earning 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 Badge Challenge in 2018

Merit Badges are in alphabetical order.

(Remember, not all merit badges are offered at each location.)

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.

Report should be a minimum of 250 words in length or more, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

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.*

ASTRONOMY

Prework: Read the current Astronomy Merit Badge pamphlet. Then complete Requirement #5, #7a, **and** #7b: Describe the composition of the Sun, its relationship to other stars, and some effects of its radiation on the Earth's weather and communications. Define sunspots and describe some of the effects they may have on solar radiation.

This description should be at least a total of 200 words in length, preferably typed. Front page needs to include your name, Troop, and District. Bring to class on the first Saturday. Refer to the Merit Badge pamphlet.

AVIATION

Prework: Complete Requirement #1a:

- Define "aircraft."
- Describe some kinds and uses of aircraft today.
- Explain the operation of a piston engine.
- Explain the operation of a turboprop engine.
- Explain the operation of a jet engine.

At least 5 different kinds of aircraft need to be described. Illustrations, drawings, images and/or photo's may be copied and used, but each aircraft needs to be described using your own words. Illustrations, drawings, images, and/or photos may be copied and used for engine descriptions as

well, but each engine needs to be described using your own words. *All written descriptions for each kind of aircraft and each type of engine must total at least 100 words in length.*

Paper should be typed with cover page including your name, Troop, and District. Bring to class on the first Saturday.

BUGLING

Limit of 2 scouts minimum.

Guideline: **Scout should be in High School.** Due to the lack of instructional time, to complete this MB the scout needs to be able to read sheet music and be proficient playing a Brass Instrument. A good measure is if he can play Taps.

CHEMISTRY

Bethel and Northern Kentucky-Cost: \$5.00

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

Description should total at least 100 words in length, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring both requirements to class on the first Saturday.

Northern Kentucky ONLY: Requirements 2c and 7:

2c. Describe the difference between a chemical reaction and a physical change.

7. Do ONE of the following activities:

- a. Visit a laboratory and talk to a practicing chemist. Ask what the chemist does, and what training and education are needed to work as a chemist.
- b. Using resources found at the library and in periodicals, books, and the Internet (with your parent's permission), learn about two different kinds of work done by chemists, chemical engineers, chemical technicians, or industrial chemists. For each of the four jobs, find out the education and training requirements.
- c. Visit an industrial plant that makes chemical products or uses chemical processes and describe the processes used. What, if any, pollutants are produced and how they are handled.
- d. Visit a county farm agency or similar governmental agency and learn how chemistry is used to meet the needs of agriculture in your county.

CHESS

Northern Kentucky, Sycamore, and Fairfield venues:

Note: SCOUTS NEED TO BE EXPERIENCED AT PLAYING CHESS TO COMPLETE THIS BADGE.

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.

Report for Req. #1 and for Req. #2 (#2a and #2b combined) should be 200 words in length or more, preferably typed. Be sure to include your name, Troop, and District at the top of the page. Bring to class on the first Saturday.

Grant Career Center/Bethel ONLY:

Same prework as above, regardless of which level you choose below.

Beginner Level Class: Scouts will learn how to play Chess and learn strategies and tactics, but will likely not finish the MB by the end of Challenge.

Intermediate Level Class: Scouts should be experienced at playing chess to complete this class.

CITIZENSHIP IN THE COMMUNITY

Northern Kentucky and Fairfield Only: Scouts 13 and over only.

Prework: Complete Requirement #3a: Attend a meeting of your city, town, or county council or school board; OR attend a municipal, county or state court session.

For Requirement #3b: Prepare a short written report for your counselor. Choose one of the issues discussed at the meeting [in 3a] where a difference of opinions was expressed, and explain in your report why you agree with one opinion more than you do another one.

Complete Requirement #4a: Choose an issue that is important to the citizens of your community; find out which branch of local government is responsible for this issue.

Complete Requirement #4b: Interview one person from the branch of government you identified in requirement 4a. Ask what is being done about this issue and how young people can help.

Complete Requirement #4c: Prepare a short written report for your counselor discussing what you learned in your interview.

Complete Requirement #5: Watch a movie that shows how the actions of one individual or group of individuals can have a positive effect on a community. Prepare a short written report for your counselor discussing what you learned from the movie about what it means to be a valuable and concerned member of the community. Movie ideas can be found on the merit badge website.

The short written reports above, preferably typed, should be in your own words, and at least 250 words in length. Bring to class on the first Saturday. Be sure to include your name, Troop, and District on the cover page.

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

Fairfield and Bethel: This merit badge is for mature Scouts, preferably those who have completed the Eighth Grade.

Prework: Complete Requirement #4c and **bring to class on the first Saturday**:

Requirement #4c: Select **TWO** of the following organizations and describe their role in the world:

1. The United Nations
2. The World Court
3. Interpol
4. World Organization of the Scout Movement
5. The World Health Organization
6. Amnesty International
7. The International Committee of the Red Cross
8. CARE
9. European Union

Descriptions should total at least 200 words in length, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

COIN COLLECTING

Prework: Complete Requirements #2a–f in written form (20 words per item) and #5a and #5b in written form (50 words each for #5a and #5b). 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

Pre-work: 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.

The short written report, preferably typed, should be at least 200 words in length. Bring to class on the first Saturday. Be sure to include your name, Troop, and District on the cover page.

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

COMMUNICATION

Pework: 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.

Report should be typed and a minimum of 300 words. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

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.

COMPOSITE MATERIALS

Pre-work: Prepare for Requirements 1a and 1b by reading the merit badge pamphlet on hazards and precautions. Be prepared for a quiz on these topics on the first class day.

COOKING

Note: The requirements for this merit badge were updated in 2017 and require considerable effort to complete outside on campouts. Scouts should review the merit badge pamphlet and the requirements carefully. There are six new categories: Health and safety, Nutrition, Cooking basics, Cooking at home, Camp cooking, Trail and backpacking meals.

Bethel ONLY: Limit 16 Scouts; must be Tenderfoot rank or higher.

Class fee: \$15 (for food Scouts will be cooking)

Read the Cooking Merit Badge front to back and study it.

Requirement #2c. Determine your daily level of activity and your caloric need based on your activity level. Then, based on the MyPlate food guide, discuss with your counselor an appropriate meal plan for yourself for one day.

Requirement #5 & #5b. Bring your menu (5a), equipment list (5d), and shopping list (5b), to the first class.

Northern Kentucky ONLY: Counselor will contact participants in this class with more detailed instructions in early December.

*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: Research this requirement. We will be discussing this in class FIRST session.

Requirement #2: Research this requirement. We will be discussing this in class FIRST session.

Requirement #3: Research this requirement. We will be discussing this in class FIRST session.

Requirement #4: Research this requirement. We will be discussing this in class FIRST session.

Requirement #5a: Using the MyPlate food guide or the current USDA nutrition model, plan five meals for your patrol (or a similar size group of up to eight youth, including you) for a camping trip. Your menus should include enough food for each person, keeping in mind any special needs (such as food allergies) and how you keep your foods safe and free from cross-contamination. These five meals must include at least one breakfast, one lunch, one dinner, AND at least one snack OR one dessert. 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 first and second. Take pictures and bring me your documentation. We will also cook a small family meal in class first session.**

Requirement #6a: 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). Be sure to keep in mind any special needs (such as food allergies) and how you will keep your foods safe and free from cross-contamination. 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 first and second. Take pictures and bring me your documentation. This does not need to be at a campout. Get your friends together and cook!**

Requirement 6a: 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). Be sure to keep in mind any special needs (such as food allergies) and how you

will keep your foods safe and free from cross-contamination. 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 first and second. 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 me your documentation. We will also be cooking a backpackers meal in class second session.**

6b. Share and discuss your meal plan and shopping list with your counselor. Your plan must include how to repackage foods for your hike or backpacking trip to eliminate as much bulk, weight, and garbage as possible. **We will discuss this together as a group before you leave first session**

Requirement #7: Find out about three career opportunities in cooking. Select 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. **Research this requirement. We will be discussing this in class FIRST session.**

CRIME PREVENTION

Prework: Requirement #2: Prepare a notebook of newspaper and other clippings that address crime and crime prevention efforts in your community.

A minimum of 10 pages is suggested. Be sure to put your name, Troop, and District on this and the other reports for this merit badge. Bring to class on the first Saturday.

DIGITAL TECHNOLOGY

Prework: Complete Requirement #1 and bring your current, up-to-date Cyber Chip card to class on the 1st 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.

Report for Requirements #2a and #2b (combined) should be 300 words in length or more, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

Bethel ONLY: Complete Requirement #8: Scout must choose two of the five options and write a report explaining what they learned.

Fairfield ONLY: Complete Requirement #9: Scout must choose one of the two options and prepare a short report to be turned in on the first Saturday.

Sycamore ONLY: Complete 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.

DISABILITIES AWARENESS

Prework: Complete Requirement #7: Name five professions that provide services to people with disabilities. Pick one that interests you and find out the education, training, and experience required for this profession. Discuss what you learn with your counselor, and tell why this profession interests you.

Report should be at least 150 words in length, preferably typed. Be sure to put name, Troop, and District on front page. Bring to class on the first Saturday.

DOG CARE

Prework: Start on Requirement #4 immediately: For two months, keep and care for your dog. *Maintain a log of your activities during this period that includes these items: feeding schedule, types of food used, amount fed, exercise periods, training schedule, a weekly body weight record, grooming and bathing schedules, veterinary care, if necessary, and costs. Also include a brief description of the type of housing/shelter arrangements you have for your dog. (Note: Work done for other merit badges cannot be used for this requirement.) Refer to Dog Care Merit Badge pamphlet.

Report should be signed by a parent with your name, Troop, and District on the front page.

Northern Kentucky Guideline: Scouts **age 13 or older**. Younger Scouts should consider the Pets MB. Read the Merit Badge pamphlet ahead of time and bring it to class.

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.

Report should be a minimum of 200 words, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

Bethel only: There may be an additional fee (\$5-10) for the electronics kit needed for this class.

EMERGENCY PREPAREDNESS

Prework: Complete Requirement #1: Earn the First Aid Merit Badge. Bring proof such as copy of First Aid merit badge blue card or signed note from Scout leader.

Complete Requirement #8b: Prepare and *bring to the first class* the following:

- Prepare a personal emergency service pack for a mobilization call.
- Prepare a family kit (suitcase or waterproof box) for use by your family in case of an emergency evacuation.

Contents of both are listed in the Emergency Preparedness Merit Badge pamphlet.

A single empty water container may be substituted for the actual water in the kit brought to class. (For all but Fairfield.)

Fairfield ONLY: The family pack shall include empty water containers made of food grade plastic having a capacity of three (3) gallons for each member of the scout's family. Example: A family of four would require bottles that could hold 12 gallons (3 gallons x 4 people = 12 gallons).

ENERGY

Prework: Complete Requirement #1a: Find an article on the use of conservation of energy.

Discuss with your counselor what in the article was interesting to you, the questions it raises, and what ideals it addresses that you do not understand.

Discussion should be a minimum of 100 words, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

Northern Kentucky ONLY: Complete Requirement #4: Conduct an energy audit of your home. Keep a 14-day log that records what you and your family did to reduce energy use. Include the following in your report and, after the 14-day period, discuss what you have learned with your counselor.

- a. List the types of energy used in your home such as electricity, wood, oil, liquid petroleum, and natural gas, and tell how each is delivered and measured, and the current cost; OR record the transportation fuel used, miles driven, miles per gallon, and trips using your family car or another vehicle.
- b. Describe ways you and your family can use energy resources more wisely. In preparing your discussion, consider the energy required for the things you do and use on a daily basis (cooking, showering, using lights, driving, watching TV, and using the computer). Explain how you can change your energy use through reuse and recycling.

ENGINEERING

Prework: Requirement #2: Select an engineering achievement that has had a major impact on society. Use the resources available to you to research it. Tell your counselor about the engineer(s) who made it possible, the special obstacles they had to overcome, and how this achievement has influenced the world today.

Discussion should be a minimum of 200 words, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

ENTREPRENEURSHIP

Prework: Complete Requirement #1: In your own words, define entrepreneurship. Explain to your merit badge counselor how entrepreneurs impact the U.S. economy.

Complete Requirement #2: Explain to your counselor why having good skills in the following areas is important for an entrepreneur: communication, planning, organization, problem solving, decision making, basic math, adaptability, technical and social skills, teamwork, and leadership.

Prepare for Requirement #3 by identifying questions for your counselors, who will be individuals who have started a business.

Requirement #3: Identify and interview an individual who has started a business. Learn about this person's educational background, early work experiences, where the idea for the business came from, and what was involved in starting the business. Find out how the entrepreneur raised the capital (money) to start the business, examples of successes and challenges faced, and how the business is currently doing (if applicable). Discuss with your counselor what you have learned.

Complete Requirement #4: Think of as many ideas for a business as you can, and write them down. From your list, select three ideas you believe represent the best opportunities. Choose one of these and explain to your counselor why you selected it and why you feel it can be successful.

Make a list of as many business ideas as you can for businesses you would like to start. While there is no minimum, we would ask that you come prepared with a list of at least three to five business ideas. Ask family and friends for ideas.

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.**

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

Requirement #5: Visit an implement dealer. Interview the dealer, technician, or service manager for hints on good preventive maintenance. Ask why it is important, the costs, and what causes wear or damage. Report what you learn.

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.

FIRST AID

Cost: \$5.00 (Northern Kentucky, Fairfield, and Sycamore)

Prework: Due to the fact that we hold class the entire morning, it is recommended the *Scouts bring a small water bottle containing only water*. Bring the First Aid Merit Badge pamphlet to class each day.

The following requirements must be completed prior to beginning class:

- Be First Class or above in rank or have completed and signed off all the first aid requirements for Tenderfoot, 2nd Class, and 1st Class ranks. **Bring your Boy Scout Handbook to class as proof.**
- The First Aid Merit Badge pamphlet must be read prior to the first Saturday of class. Be sure to obtain the most recent book (requirements were revised in January 2015).
- Requirement #2d: Prepare a first-aid kit for your home. Use list in found in Merit Badge pamphlet. ***Bring 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.

GEOCACHING

Prework: Requirement #7: With your parent's permission*, go to www.Geocaching.com. Type in your zip code to locate public geocaches in your area. Share the posted information about three of those geocaches with your counselor. Then, pick one of the three and find the cache.

*To fulfill this requirement, you will need to set up a free user account with www.Geocaching.com. Ask your parent for permission and help before you do so.

Complete Requirement #8: Do ONE of the following:

- a. If a Cache to Eagle ® series exists in your council, visit at least three of the locations in the series. Describe the projects that each cache you visit highlights, and explain how the Cache to Eagle ® program helps share our Scouting service with the public. ***Bring printouts of the geocache log that satisfies the number of visited geocaches.***
- b. Create a Scouting-related Travel Bug ® that promotes one of the values of Scouting. "Release" your Travel Bug into a public geocache and, with your parent's permission, monitor its progress at www.geocaching.com for 30 days. Keep a log, and share this with your counselor at the end of the 30-day period. ***Bring printouts of the geocache log showing the 30 day time period.***
- c. Set up and hide a public geocache, following the guidelines in the Geocaching Merit Badge pamphlet. Before doing so, share with your counselor a six-month maintenance plan for the geocache where you are personally responsible for the first three months. After setting up the geocache, with your parent's permission, follow the logs online for 30 days and share them with your counselor. ***Share your maintenance plan and bring printouts of the geocache log showing the 30 day time period.***
- d. Explain what Cache In Trash Out (CITO) means, and describe how you have practiced CITO at public geocaches or at a CITO event. Then, either create CITO containers to leave at public caches, or host a CITO event for your unit or for the public. ***Explain CITO practice to the counselor (may be as a written statement), then show adequate proof of CITO implementation (photographs would be most helpful).***

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.

GEOLOGY

Prework: Complete Requirement #2: Pick three resources that can be extracted or mined from Earth for commercial use. Discuss with your counselor how each product is discovered and processed.

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

Fairfield ONLY: Preparation for Requirement #5: The Scout should choose one of the options in Requirement #5 prior to coming to the first session since they will divide into groups according to the options.

Northern Kentucky ONLY: Requirement #4b: Find out about three career opportunities available in geology. Pick one and find out the education, training, and experience required for the profession. Discuss this with your counselor, and explain why this profession might interest you.

GRAPHIC ARTS

Graphic Arts: Requirement #2: Explain the differences between continuous tone, line, and halftone artwork. Describe how it can be created and/or stored in a computer.

INDIAN LORE

Prework: Start Requirement #3c: Make an **authentic** model of a dwelling used by any Indian tribe, group, or nation and **bring to the first class**.

INVENTING

Prework: Review the entire Inventing Merit Badge pamphlet.

Complete Requirement #2a: Interview an inventor. Write a report.

Preparation for Requirement #5: Bring a piece of camp equipment with ideas of how to improve it. This requirement will be discussed in Session Two. However, it is important to prepare for the discussion before Merit Badge Challenge starts.

Preparation for Requirement #6: Think of an item to invent that would solve a problem for family, troop, Charter organization, community or special interest group. Keep notebook to record progress on Requirements #6a, #6b, and #6c.

Complete Requirement #6a: Interview potential users of invention; determine needs. Describe the invention and how it would help solve a problem; include a sketch. ***Must be done by Session Two.***

Complete Requirement #8a or #8b: Participate in club or team to build useful item or visit invention or inventor museum.

LAW

Prework: Complete Requirement #3: Tell what civil law is; tell what criminal law is. Tell the main differences between them. Give examples of each.

Report should be at least 150 words, preferably typed, and list three examples of each. Be sure to include your name, Troop, and District on the first page. Bring Requirement #3 completed to class the first Saturday.

Northern Kentucky ONLY: Scouts must have Law Merit Badge pamphlet to complete the merit badge.

MEDICINE

Northern Kentucky ONLY: Counselor will contact registered youth prior to the Challenge.

Prework: 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.

Report should be at least 200 words in length excluding the oaths, and preferably typed. Be sure to include your name, Troop, and District on the front page. Bring to class on the first Saturday.

MODEL DESIGN AND BUILDING

Note that models are to be physically built, three-dimensional models – graphic models do not fulfill the requirements.

Prework: Complete Requirement #2: Explain the uses for each of the following types of models: (1) architectural, (2) structural, (3) process, (4) mechanical, and (5) industrial. Do research into the different types of materials that could be used in making these models.

Report should be at least 200 words, and preferably typed. Be sure to include your name, Troop, and District on the front page. Bring to class on the first Saturday.

MOVIEMAKING

[Note: Scouts that have earned Cinematography should NOT take Moviemaking. Same badge, different name.]

Prework: Complete Requirement #3b: Explain to your counselor the elements of the zoom lens and three important parts.

Description should total at least 100 words in length, preferably typed with a labeled sketch of the zoom lens. Be sure to include your name, Troop, and District on the first page. Bring both requirements to class on the first Saturday.

MUSIC

Important note regarding Requirement #1: The playing and sight-reading skills needed for this performance suggest at least two years of experience playing with your school band, orchestra, or ensemble or singing with a choral group. The Scout may also have gained this experience by studying with a private music teacher. The Scout must choose a piece, which the counselor approves, to play or sing in class. The Scout must demonstrate good technique, phrasing, tone, rhythm and dynamics which may not be evident in those just beginning to play an instrument (those with less than two years experience). Performances will take place in sessions 2 and 3.

PLEASE NOTE: THE SCOUT MUST BE ABLE TO READ MUSIC.

Also note: Music MB is not a tutoring class. The scout must demonstrate proficiency.

Prework: Complete Requirement #3: Do **TWO** of the following:

- a. Go to a classical or semi classical musical performance or listen to three hours of such programs on radio, television, compact discs, tapes, records, or videos. Report what you heard. Name the composers, artists, and conductors. Know the story of any program music or opera you heard. Discuss how you feel about the music. ***Report should be typed and at least 300 words. Your name, Troop, and District should appear on the first page.***
- b. Interview your parents and grandparents about music. Find out what the most popular music was when they were your age. Find out what their favorite music is now, and listen to three of their favorite tunes with them. How do their favorites sound to you? Had you ever heard any of them: Play three of your favorite songs for them, and explain to them why you like these songs. Ask them what they think about your favorite music. ***Report should be typed and at least 300 words. Your name, Troop, and District should appear on the first page.***
- c. Serve for six months as a member of a school, church, Scout Troop, or other local musical organization, or perform as a soloist in public six times. ***Bring note from your Scout leader, parent, church leader, or teacher verifying the completion of this requirement***
- d. List five people who are important in the history of American music and explain to your counselor why they continue to be influential. Include at least one composer, one performer, one innovator, and one person born over 100 years ago. ***Report should be typed and at least 300 words. Your name, Troop, and District should appear on the first page.***

NUCLEAR SCIENCE

Prework: Complete Requirement #1b: Describe the hazards of radiation to humans, the environment, and wildlife. Explain the difference between radiation exposure and contamination. In your explanation, discuss the nature and magnitude of radiation risks to humans from nuclear power, medical radiation, and background radiation including radon. Explain the ALARA principle and measures required by law to minimize these risks.

Report should be at least 150 words, preferably typed. It is suggested a color sketch of the hazard symbol be included. Be sure to include name and Troop number on your report.

PAINTING

There will be a small fee of \$2.00 per Scout for paint and materials.

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.

Fairfield ONLY: Field trip will be added as part of course.

Northern Kentucky ONLY: Requirement #8.

Demonstrate to your merit badge counselor your understanding of time management by doing the following:

- a. Write a "to do" list of tasks or activities, such as homework assignments, chores, and personal projects, that must be done in the coming week. List these in order of importance to you.
- b. Make a seven-day calendar or schedule. Put in your set activities, such as school classes, sports practices or games, jobs or chores, and/or Scout or church or club meetings, then plan when you will do all the tasks from your "to do" list between your set activities.
- c. Follow the one-week schedule you planned. Keep a daily diary or journal during each of the seven days of this week's activities, writing down when you completed each of the tasks on your "to do" list compared to when you scheduled them.
- d. Review your "to do" list, one-week schedule, and diary/journal to understand when your schedule worked and when it did not work. With your merit badge counselor, discuss and understand what you learned from this requirement and what you might do differently the next time.

PETS

Prework: Immediately start Requirement #1: Present evidence that you have cared for a pet for four months. Work done for other merit badges cannot be used for this requirement. Bring evidence to the class on the first Saturday.

Northern Kentucky ONLY: Scouts must have read the Pets Merit Badge pamphlet and bring it to the class on the first Saturday.

PHOTOGRAPHY

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

Prework: 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.

Discussion should be a minimum of 150 words, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

Earn your Cyber-Chip card before the first day of class.

PLUMBING

Prework: Complete Requirement #2: Do the following (use info in Plumbing Merit Badge pamphlet as a guide):

- a. Make a drawing and explain the way the hot- and cold-water supply system in your home or that of a neighbor works. Tell how you would make it safe from freezing. (*50 word minimum*)
- b. Make a drawing and explain the drainage system of the plumbing in a house. Show and explain the use of drains and vents. (*50 word minimum*)

Complete Requirement #8: Do the following (bring a signed note from an adult verifying that you have done this requirement):

- a. Replace a washer in a faucet.
- b. Clean out a sink or lavatory trap.

PUBLIC HEALTH

Fairfield ONLY: Two field trips are associated with this merit badge for Requirements #5a and #5b.

Prework: Complete Requirements #2a and 2b: Do the following:

- a. Explain the meaning of *immunization*.
- b. Name five diseases against which a young child should be immunized and two diseases against which you should be immunized periodically.

Bring completed requirement in written form to class the first Saturday. Be sure to include your name, Troop, and District on the first page.

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.

Northern Kentucky ONLY: Prework: Requirement #2: Prepare a three- to five-minute talk on a topic of your choice that incorporates body language and visual aids.

PULP AND PAPER

Cost: \$2.50 for papermaking kit (Fairfield and Sycamore).

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

Bethel: No cost and no field trip planned.

Bethel, Fairfield, and Sycamore: Pework: 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

Scouts must read the Radio Merit Badge pamphlet and bring it to class on the first Saturday. (Note: Be sure to get the most recent version of the pamphlet; requirements were last updated in 2017.)

Note: This merit badge is not difficult but can be a challenge to first year Scouts. Please use discretion when recommending this badge to your Scouts.

Pework: Complete Requirement #3: Do the following:

- a. Draw a chart of the electromagnetic spectrum covering 100 kilohertz (kHz) to 1000 megahertz (MHz).
- b. Label the MF, HF, VHF, UHF, and microwave portions of the spectrum on your diagram.
- c. Locate on your chart at least eight radio services such as AM and FM commercial broadcast, Citizens Band (CB), television, amateur radio (at least four ham radio bands), and public service (police and fire).

Report, excluding drawing and photos, should be written (typed preferred) and be a minimum of 100 words. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

RAILROADING

Cost is \$10 to cover 2 kits and books payable at first meeting. (The cost is being partly subsidized by the National Model Railroad Association.)

Pework: None.

READING

Bethel, Fairfield, Northern Kentucky: Start Requirement #1b: With the assistance of your merit badge counselor or a librarian, select six books of four different types (such as poetry, drama/plays, fiction, non-fiction, biographies, etc.). Ask your librarian or counselor about award-winning books that are recommended for readers your age and include at least one of those titles.

Note: The more reading you complete before the Challenge, the more likely you are to finish the merit badge by the end of the Challenge.

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: \$10 to cover replacement of materials in robotics kit. (Northern Kentucky: \$5)

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

Prework: Read the section of the Safety Merit Badge pamphlet on "safety in your home." Use the check list in the book (or other similar list) to **COMPLETE** the following:

- a. Complete Requirement #2a: Using a safety checklist approved by your counselor, make an inspection of your home. Identify any hazards found and explain how these can be corrected.

Be prepared to discuss the hazards found and methods to correct them. Bring completed checklist and hazard discussion to class the first Saturday.

SCHOLARSHIP

Prework: Complete Requirement #1: Do **ONE** of the following:

- a. Show that your school grades have been an average of B or higher (80 percent or higher) for one term or semester.
- b. Show that for one term or semester you have improved your school grades over the previous period.

Complete Requirement #3: Get a note from the principal* of your school that during the past year your behavior, leadership, and service have been satisfactory. (**Or from another school person named by the principal.*)

SCOUTING HERITAGE

Prework: Complete Requirements #5 and #8 and bring to class the first Saturday.

Complete Requirement #5: Learn about the history of your Troop or Scouting in your area. Interview at least two people (**one from the past and one from the present**) associated with your troop. These individuals could be adult unit leaders, Scouts, troop committee members, or representatives of your troop's chartered organization. Find out when your Troop was originally chartered. Create a report of your findings on the history of your troop, and present it to your patrol or troop at a court of honor, and then add it to your troop's library. This presentation could be in the form of an oral/written report, an exhibit, a scrapbook, or a computer presentation such as a slide show.

Bring your presentation to class on the first Saturday, along with a note from your Scoutmaster indicating that you have made your presentation to your troop or patrol.

Complete Requirement #8: Interview at least three people (*different from those you interviewed for Requirement #5*) over the age of 40 who were Scouts. Find out about their Scouting experiences. Ask about the impact that Scouting has had on their lives. Share what you learned with your counselor.

Prepare a written report of your findings of at least 500 words and bring it to the first meeting. Be sure to include your name, Troop, and District on the first page.

Sycamore ONLY:

Prework: Complete Requirements #2a and #2b, #4a or #4b and bring to class on the first Saturday.

Complete Requirement #2a: Give a short biographical sketch of TWO of the following, and tell their role in how Scouting developed and grew in the United States prior to 1940:

- Daniel Carter Beard
- William D. Boyce
- Waite Phillips
- Ernest Thompson Seton
- James E. West

Complete Requirement #2b: Discuss the significance to Scouting of any TWO of the following:

- Brownsea Island
- The First World Jamboree
- Boy Scout Handbook
- Boy's Life Magazine

Complete Requirement #4: Do ONE of the following:

- a. Attend either a BSA national jamboree, or world Scout jamboree, or a national BSA high-adventure base. While there, keep a journal documenting your day-to-day experiences. Upon your return, report to your counselor what you did, saw, and learned. You may include photos, brochures and other documents in your report.
- b. Write or visit the National Scouting Museum in Irving, Texas. Obtain information about this facility. Give a short report on what you think the role of this museum is in the Scouting program.

SEARCH AND RESCUE

Prework: Requirement #5

Northern Kentucky ONLY: Must be First Class Scout and have First Aid Merit Badge.

SIGNS, SIGNALS, AND CODES

Prework: The following requirements need to be completed outside of class in order to complete the merit badge. While the use of badge workbooks (like Meritbadge.org) is not required, it is highly encouraged. Please bring your own copy of the workbook/guide to your first session.

Requirement #2: Explain the importance of signaling in emergency communications. Discuss with your counselor the types of emergency or distress signals one might use to attract airborne search-and-rescue personnel if lost in the outdoors or trying to summon assistance during a disaster. Illustrate these signaling examples by the use of photos or drawings.

Requirement #3a (to prep for class): Prepare a six to ten word message to transmit using Morse code.

Requirement #3b (to prep for class): Prepare a six to ten word message to transmit using American Sign Language.

Requirement #4a (to prep for class): Prepare a six to ten word message to transmit using semaphore.

Requirement #5b (to prep for class): Create a message of at least six words in braille.

Requirement #7: On a Scout outing, lay out a trail for your patrol or troop to follow. Cover at least one mile in distance and use at least six different trail signs and markers. After the Scouts have completed the trail, follow no-trace principles by replacing or returning trail markers to their original locations.

Requirement #9: Prepare a list of at least ten symbols used in everyday life. Design your own symbol and be ready to share it with your counselor.

- a. Show examples of ten traffic signs and explain their meaning.
- b. List examples of your favorite ten text symbols or emoticons

Requirement #10: Make up your own secret code and write a message of up to 25 words using this code. Share the message with a friend or Scout. Prepare to discuss the effectiveness of the code with your counselor.

SPACE EXPLORATION

Prework: Complete Requirement #5: Do **TWO** of the following:

- a. Discuss with your counselor an unmanned space exploration mission and an early manned mission. Tell about each mission's major discoveries, its importance, and what we learned from it about the planets, moons, or regions of space explored. (**Report should be typed and a minimum of 300 words. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.**)
- b. Using magazine photographs, news clippings, and electronic articles (such as the Internet), make a scrapbook about a current planetary mission. (**Item should be a minimum of 6 pages. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.**)
- c. Design an unmanned mission to another planet or moon that will return samples of its surface to Earth. Name the planet or moon your spacecraft will visit. Show how your design will cope with the conditions of the planet's or moon's environment. (**Report, excluding drawing and photos, should be written (typed preferred) and be a minimum of 200 words. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.**)

Scouts must have read the Space Exploration Merit Badge pamphlet and bring it to class. Classroom discussion will be centered on what you read in the book.

Fairfield and Northern Kentucky Only: Requirement #3: Design a collector card with a picture on the front and information on the back about your favorite space pioneer.

Fairfield and Northern Kentucky Only (cont'd): Requirement #7: Design an inhabited base located on the Moon or Mars. Make drawings or a model of your base. In your design, consider and plan for the following:

- a. Source of energy
- b. How it will be constructed
- c. Life support system
- d. Purpose and function

Northern Kentucky ONLY: \$20 fee payable to the counselor in class on the first Saturday to cover an Estes model rocket for you to build and two engines.

STAMP COLLECTING

Prework:

Fairfield, Sycamore, and Northern Kentucky: Requirement #1: Do the following:

- a. Discuss how you can better understand people, places, institution, history, and geography as a result of stamp collecting.
- b. Briefly describe some aspects of the history, growth, and development of the United States postal system. How is it different from postal systems in other countries?

Report for Requirement #1a should be 100 words in length or more and report for #1b should be at least 200 words in length, both preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.

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.

Report should be at least 150 words, and preferably typed. Be sure to include name, Troop, and District on the front page. Bring to class on the first Saturday.

Grant Career Center/Bethel ONLY:

For the report in Requirement #1 above, answer the following:

- What does Sustainability mean?
- How does conservation and stewardship relate to Sustainability?
- Write down what each member of your family thinks that Sustainability means.
- Make a mental note of how much food you leave on your plate each meal.
- Make a mental note of how long your showers are.
- Make a mental note of how much trash your family takes to the curb each week.

TEXTILES

Cost: \$5 fee payable to the counselor in class on the first Saturday to cover materials.

Bring 2 skeins of yarn to class on the first Saturday. Color of your choice.

THEATER

Prework:

Requirement #1 – See or read three full-length plays or scripts. Write a review of each.

Requirement #2 – Write a one-act play that will take at least 8 minutes to perform.

Northern Kentucky Only: Additional fee - \$3. Prework TBD.

TRAFFIC SAFETY

Prework: Complete Requirement #1a: Describe the top 10 mistakes new drivers frequently make. Name the two items you are required by law to carry with you whenever you operate a motor vehicle.

Report should be at least 150 words, and preferably typed. Be sure to include name, Troop, and District on the front page. Bring to class on the first Saturday.

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.

Grant Career Center/Bethel AND Northern Kentucky ONLY: Preparation for Requirement #10: Scoutmaster should sign-off that a Scout taking this badge has scheduled time during their next meeting (before the end of MBC) for a 5-minute speech about severe weather safety rules.

WELDING

Prework: Prepare for Requirements #1 and #2 by reading the Welding Merit Badge pamphlet on hazards, first aid, safety and proper care. **Be prepared for a quiz on these topics on the first class day.**

Complete Requirement #3: Explain the terms welding, electrode, slag, and oxidation. Describe the welding process, how heat is generated, what kind of filler metal is added (if any), and what protects the molten metal from the atmosphere.

This report should be 125 words or more, preferably typed, and should be turned in during class on the first Saturday.

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.

WILDERNESS SURVIVAL

Prework:

Requirement #5 Put together a personal survival kit and explain how each item in it could be useful. (bring to class).

Requirement #8 Improvise a natural shelter. Use techniques that have little negative impact on the environment. Spend a night in your shelter. (must be done by second class session).

Note: Scouts can take pictures or video of their shelter/ overnight experience to share with the class.

WOOD CARVING

Cost: \$12.00 for carving knife (Northern Kentucky)

Cost: \$15.00 for carving knife (Bethel, Fairfield, and Sycamore)

Prework: BRING TOTIN' CHIP CARD EACH SATURDAY.

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

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

WOODWORK

Prework: Complete Requirement #2a: Describe how timber is grown, harvested, and milled. Tell how lumber is cured, seasoned, graded, and sized.

Report should be at least 200 words in length, preferably typed. Be sure to include your name, Troop, and District on the first page. Bring to class on the first Saturday.