

# **Pioneer District Merit Badge Midway**

## **Pre-Work by Merit Badge**

### **Impress the following upon your Scouts:**

1. **READ** the merit badge book (link to requirements and free book download listed with each merit badge)
2. **Know and understand** the merit badge requirements
3. Answer **ALL** pre-work questions **COMPLETELY**
4. **ALL** pre-work answers should be **TYPE-WRITTEN**
5. Include your name, troop number, and requirement number **ON EACH PAGE**
6. Complete the pre-work **PRIOR** to attending the session
7. Hand the pre-work in to your counselor at the beginning of the session
8. Be prepared to **DISCUSS ALL** of the requirements in class

### **To receive the merit badge, the Scout MUST:**

1. **READ** the merit badge book,
2. **COMPLETE ALL** Pre-Work,
3. **ATTEND** the Merit Badge Session, **AND**
4. **PARTICIPATE** in the Merit Badge Class Discussion
  - a. **Counselors will keep track of who participates**

Updated: Jan. 30, 2026

## **American Business:**

**Read the American Business merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/american-business/>**

**#3 - Do the following:**

- a) Explain the place of profit in business.
- b) Describe to your counselor green marketing and sustainable business practices.
- c) Explain how ethics plays a role in business decision making.
- d) Discuss the differences between operating a brick-and mortar business versus an online business.

**#5 - Choose a business and research how it applies each of the primary areas of business (accounting, finance, economics, marketing, and management). Share what you have learned with your counselor.**

**#6 - Do ONE of the following:**

- a) Choose one of the primary areas of business and identify three career opportunities. Select one and research the education, training, and experience required for this career. Discuss this with your counselor and explain why this interests you.
- b) Select a business leader and interview this individual to learn more about his or her company and career path. Discuss the role ethics plays in making business decisions. Share what you have learned with your counselor.

# **Artificial Intelligence:**

**Read the Artificial Intelligence merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/artificial-intelligence/>**

**NOTE: Scouts will need to bring a laptop, Chromebook, or other portable computer as there are none to use onsite.**

**Scoutly Chatbot** - Test the "Scoutly" chatbot on **<https://www.scouting.org>**. The Scoutly chatbot appears as the robot in the lower right corner. What do you think of it? Did it work for you or not? What ideas, if any, do you have to make it better?

**#2 - Do the following and share what you learned with your counselor:**

- a. Identify 5 examples for Pre-Work:** Identify ten examples of how AI is currently used in everyday life.

**Identify 3 examples of the following 10 examples for Pre-Work:**

- b.** Identify five examples of how AI is currently used in the workplace.
- c.** Identify five examples of how AI can be used at school or in support of your education.

**#3 - Do the following and share what you learned with your counselor:**

- a. Identify 7 examples for Pre-Work:** Identify ten examples of how automation is currently used in everyday life.

**Identify 4 examples of the following 10 examples for Pre-Work:**

- b.** Identify five examples of how automation is currently used in the workplace.
- c.** Identify five examples of how automation can be used at school or in support of your education.

**#4a - Name 1 ethical concern for Pre-Work:** Research ethical concerns and responsible use in AI, including bias, privacy, and AI decision-making.

**#5 - Do the following and share what you learned with your counselor:**

- a.** Explain what a deepfake is and how it can affect an individual.
- b.** Describe what actions to take if you or someone you know is impacted by a deepfake.

**#6b - Identify 3 methods for Pre-Work:** Identify five methods of how to effectively communicate with AI.

**#8 - Do ONE of the following:**

- a. Identify three career opportunities that would use skills and knowledge in artificial intelligence or automation. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities, and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.
- b. Interview an artificial intelligence or automation professional. Learn about their day-to-day work, the challenges they face, and their vision for the future of artificial intelligence or automation. Inquire about training, education, certification requirements, experience, and expenses associated with entering the field. Share what you learned with your counselor.

## **Automotive Maintenance:**

**Read the Automotive Maintenance merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/automotive-maintenance/>**

**#1 – Work up the following to discuss in class:**

- a. Explain to your counselor the hazards you are most likely to encounter during automotive maintenance activities, and what you should do to anticipate, help prevent, mitigate, or lessen these hazards.
- b. Discuss with your counselor the safety equipment, tools, and clothing used while checking or repairing a motor vehicle. Use this equipment, tools, and/or clothing (when needed or called for) in meeting the requirements for this merit badge.

**#9 Drive Train.** Do the following:

- a. Diagram the drive train and explain the different parts.

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

## **Chemistry:**

**Read the Chemistry merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

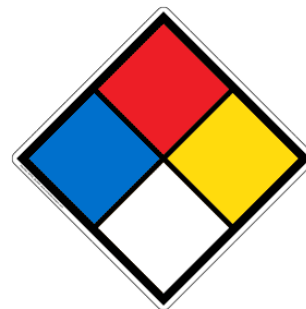
**<https://www.scouting.org/merit-badges/chemistry/>**

**#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.

**Be prepared to discuss the following in class:**

1. What is the difference between a chemical and physical change? Please give two examples of each.
2. List and define the 5 main branches of chemistry. In addition, name one job in each branch.
3. What are the 3 components that make up an atom? What is the charge of each component?
4. The diamond to the right is used for the National Fire Protection Association Hazard Identification System. Explain what each color represents. Do higher numbers in the diamond indicate a more or less severe hazard?
5. What does pH measure? Would the following household items have a pH higher or lower than 7?
  - a. Coke-a-Cola
  - b. Shampoo
  - c. Milk
  - d. Bleach
  - e. Vinegar
  - f. Dish soap



## **Citizenship in Society:**

**Read the Citizenship in Society merit badge booklet and be prepared to describe terms and information from the book.**

**Come prepared to discuss all terms and requirements.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/citizenship-in-society/>**

**#2** - Document and discuss with your counselor what leadership means to you. Share what it means to make ethical decisions.

- a) Research and share with your counselor an individual you feel has demonstrated positive leadership while having to make an ethical decision. (It could be someone in history, a family member, a teacher, a coach, a counselor, a clergy member, a Scoutmaster, etc.)
- b) Explain what decision and/or options that leader had, why you believe they chose their final course of action, and the outcome of that action.

**#3** Consider ethical decision-making.

- a) Think about a time you faced an ethical decision.
  - Discuss the situation, what you did, and how it made you feel.
  - Share if you would do anything differently in the future and if so, what that would be.

**#7** - Identify and interview an individual in your community, school, and/or Scouting who has had a significant positive impact in promoting diversity, equity, and inclusion. If you feel your community, school, or local Scouting group does not have such an individual, then research a historical figure who meets these criteria, and discuss that person with your counselor.

- a) Discover what inspired the individual, learn about the challenges they faced, and share what you feel attributed to their success.

**#8** - With the help of your parent or guardian, study an event that had a positive outcome on how society viewed a group of people and made them feel more welcome. Describe to your counselor the event and what you learned.

**#9** - Document and discuss with your counselor three or more areas in your life outside of Scouting where you feel you can actively provide stronger leadership in.

- a) Making others feel included.
- b) Practicing active listening.
- c) Creating an environment where others feel comfortable to share their ideas and perspectives.
- d) Helping others feel valued for their input and suggestions.
- e) Standing up for others.



## **Citizenship in the Community:**

Read the Citizenship in the Community merit badge book and prepare the following requirements in advance.

Link to requirements & downloadable book:

**<https://www.scouting.org/merit-badges/citizenship-in-the-community/>**

Citizenship in the Community requires a great deal of advance work because scouts attending Merit Badge Midway come from a diverse number of communities. The merit badge requirements require scouts to answer the questions for their individual communities.

The counselor will ask you to discuss your work with the rest of the class. There are several requirements that require you to get your parent's and the counselor's permission before you start the requirements. You need **only get your parent's permission** to complete the work before Merit Badge Midway.

Requirements to prepare in advance of the Midway and bring the materials to class along with documentation of your completion of the requirements.

**#2** - Do the following:

- a. On a map of your community or using an electronic device, locate and point out the following:
  1. Chief government buildings such as your city hall, county courthouse, and public works/services facility
  2. Fire station, police station, and hospital nearest your home
  3. Parks, playgrounds, recreation areas, and trails
  4. Historical or other interesting points of interest
- b. Chart the organization of your local or state government. Show the top offices and tell whether they are elected or appointed.

**#3** - Do the following:

- a. Attend a meeting of your city, town, or county council or school board;  
OR attend a municipal, county, or state court session.
- b. Choose one of the issues discussed at the meeting where a difference of opinions was expressed, and explain to your counselor why you agree with one opinion more than you do another one.

**#4** - Choose an issue that is important to the citizens of your community; then do the following:

- a. Find out which branch of local government is responsible for this issue.
- b. With your counselor's and a parent's approval, 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.
- c. Share what you have learned with your counselor

**#5** - With the approval of your counselor and a parent, watch a movie that shows how the actions of one individual or group of individuals can have a positive effect on a community. Discuss with your counselor what you learned from the movie about what it means to be a valuable and concerned member of the community.

**#6** - List some of the services (such as the library, recreation center, public transportation, and public safety) your community provides that are funded by taxpayers. Tell your counselor why these services are important to your community.

**#7** - Do the following:

- a. Choose a charitable organization outside of Scouting that interests you and brings people in your community together to work for the good of your community.
- b. Using a variety of resources (including newspapers, fliers and other literature, the Internet, volunteers, and employees of the organization), find out more about this organization.
- c. With your counselor's and your parent's approval, contact the organization you chose for requirement 7b and find out what young people can do to help. While working on this merit badge, volunteer at least eight hours of your time for the organization. After your volunteer experience is over, discuss what you have learned with your counselor.

**#8** - Develop a public presentation (such as a video, slide show, speech, digital presentation, or photo exhibit) about important and unique aspects of your community. Include information about the history, cultures, and ethnic groups of your community; its best features and popular places where people gather; and the challenges it faces. Stage your presentation in front of your merit badge counselor or a group, such as your patrol or a class at school.

## **Citizenship in the Nation:**

**Read the Citizenship in the Nation merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/citizenship-in-the-nation/>**

**#5** - Watch the national evening news for five days in a row or read the main stories in a national media organization (e.g., a newspaper or news website) for five days in a row. Discuss the national issues that you learned about with your counselor. Choose one issue and explain how it affects you, your family, and community.

**#7** - Do ONE of the following:

- a.** Visit a place that is listed as a National Historic Landmark or that is on the National Register of Historic Places. Tell your counselor what you learned about the landmark or site and what you found interesting about it.
- b.** Tour your state capitol building or the U.S. Capitol. Tell your counselor what you learned about the capitol, its function, and the history.
- c.** Tour a federal facility. Explain to your counselor what you saw there and what you learned about its function in the local community and how it serves this nation.

**#8** – Bring a stamped envelope

## **Citizenship in the World: *Last year's pre-work.*** ***Not confirmed with Counselor for this year***

Read the Citizenship in the World merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/citizenship-in-the-world/>

**#3** - Do the following:

- a. Pick a current world event. In relation to this current event, discuss with your counselor how a country's national interest, history, and its relationship with other countries might affect areas such as its security, its economy, its values, and the health of its citizens.
- b. Select a foreign country and discuss with your counselor how its geography, natural resources, and climate influence its economy and its global partnerships with other countries.

**#7** - Do TWO of the following (with your parent's permission) and share with your counselor what you have learned:

- a. Visit the Web site of the U.S. State Department. Learn more about an issue you find interesting that is discussed on this website.
- b. Visit the website of an international news organization or foreign government, OR examine a foreign newspaper available at your local library, bookstore, or newsstand. Find a news story about a human right realized in the United States that is not recognized in another country.
- c. Visit with a student or Scout from another country and discuss the typical values, holidays, ethnic foods, and traditions practiced or enjoyed there.
- d. Attend a world Scout jamboree.
- e. Participate in or attend an international event in your area, such as an ethnic festival, concert, or play.

## **Coin Collecting:**

**Read the Coin Collecting merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/coin-collecting/>**

**NOTE: Scouts need to Access the Counselor's Session DropBox Folder at: <https://bit.ly/41I2XI2> to Print and Follow Pre-Session Instructions Checklist including: Scouts Should Acquire the "Coin Collecting" MB Pamphlet/Booklet (2024 Version), and Print the MB Workbook to Document Their Work.**

**#4 - Do the following and explain to your counselor the design features, designer name, designer initials, and where to find them for each item:**

- (a) Collect a one-cent coin from the year group: 1959-2008 (that is, dated between 1959 and 2008) and a one-cent coin from the year group 2010-present. Explain how and why the one-cent coins issued in 2009 were different from either of the other two year groups.
- (b) Collect two five-cent coins, one from each of these year groups: 1959-2003 and 2006-present. Explain how and why the five-cent coins issued in 2004-2005 were different from either of the other two year groups.
- (c) Collect a ten-cent coin from 1965-present.
- (d) Collect a twenty-five-cent coin from 1965-1998, two examples from the 50-State Quarter® /territories Program 1999-2009, two designs from the America the Beautiful® program 2012-2021 and two designs from the American Woman Quarter® program (2022-2024). Explain the purpose of each of those programs.
- (e) Collect a half dollar coin from 1965-present.
- (f) Collect a dollar coin from the following design groups: Susan B. Anthony 1979-81, Sacagawea 1990-2005, U.S. Presidents 2000-2014.

**#7 - Do ONE of the following:**

- (a) Collect and identify for your counselor 20 different world coins from at least seven different countries. Identify the country, major design elements, and denomination of each.
- (b) Collect and identify for your counselor 20 different world paper money from at least 7 different countries. Identify the country, major design elements, and denomination of each.
- (c) Collect and identify for your counselor 20 different tokens and/or medals. Identify the issuer and use of each.
- (d) Complete one of the following and report to your counselor what you experienced:
  - (1) Attend a coin show.
  - (2) Attend a coin club meeting.
  - (3) Tour a U.S. Mint facility or museum.
  - (4) Tour a virtual exhibit (with your parent or guardian's permission) approved by your counselor.

## **Communication:**

Read the Communication merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/communication/>

**#2 - Do ONE of the following:**

- a. Think of a creative way to describe yourself using, for example, a collage, short story or autobiography, drawing or series of photographs, or a song or skit. Using the aid you created, make a presentation to your counselor about yourself.
- b. Choose a concept, product, or service in which you have great confidence. Build a sales plan based on its good points. Try to persuade the counselor to agree with, use, or buy your concept, product or service. After your sales talk, discuss with your counselor how persuasive you were.

**#3 - Write a five-minute speech.**

*Note: Have the speech prepared. The speech will be given during class.*

**#7 - Do ONE of the following:**

- a. Write to the editor of a magazine or your local newspaper to express your opinion or share information on any subject you choose. Send your message by fax, email or regular mail.
- b. Create a web page or blog of special interest to you (for instance, your troop or crew, a hobby, or a sport). Include at least three articles or entries and one photograph or illustration, and one link to some other webpage or blog that would be helpful to someone who visits the webpage or blog you have created. ***It is not necessary to post your webpage or blog to the Internet, but if you decide to do so, you must first share it with your parents and counselor and get their permission.***
- c. Use desktop publishing to produce a newsletter, brochure, flier or other printed material for your scout troop, class at school, or other group. Include at least one article and one photograph or illustration.

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

## **Cybersecurity:**

**Read the Cybersecurity merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/cybersecurity/>**

**NOTE: Scouts will need to bring a laptop, Chromebook, or other portable computer as there are none to use onsite.**

**#1a** - View the Personal Safety Awareness "Digital Safety" video (with your parent or guardian's permission).

**#4e - Current Events.** Do ONE of the following:

- a. Read an article or a news report about a recent cybersecurity incident, such as a data breach or malware infection. Explain how the incident happened (to the best of your ability based on the information available) and what the consequences are or might be to the victim.
- b. With your parent or guardian's permission, watch a movie or read a book in which cybersecurity plays a significant role. Discuss how cybersecurity topics were depicted and how realistic you think it was.

**#9 - Careers.** Do ONE of the following:

- c. Investigate three career opportunities that would use skills and knowledge in cybersecurity. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.
- d. Visit a business or organization that does work in cybersecurity. Find out about different work roles, what they do, and how they acquired their knowledge through college degrees or certifications. Share what you learned with your counselor.



## **Digital Technology:**

**Read the Digital Technology merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/digital-technology/>**

**NOTE: Scouts will need to bring a laptop, Chromebook, or other portable computer as there are none to use onsite.**

- #1** - View the Personal Safety Awareness "Digital Safety" video (with your parent or guardian's permission).
- #2b** - Describe what kinds of computers or devices you imagine might be available when you are an adult.
- #3c** - Describe two digital devices and how they are made more useful by their programming.
- #4b** - Name four software programs or mobile apps you or your family use, and explain how each one helps you.
- #5b** - Using an internet search engine (with a parent or guardian's permission), find ideas from at least three different websites about how to conduct a troop court of honor or campfire program. Present the ideas to your counselor and explain how you used a search engine to find this information.
- #9** - Do ONE of the following:
  - e.** Investigate three career opportunities that involve digital technology. 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.
  - f.** Visit a business or an industrial facility that uses digital technology. Describe four ways digital technology is being used there. Share what you learned with your counselor.

**Note:** If you take both digital technology and programming, viewing the Personal Safety Awareness "Digital Safety" video and doing the career research will count for **both** badges.

## **Disabilities Awareness:**

**Read the Disabilities Awareness merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/disabilities-awareness/>**

**#2** - Visit an agency that works with people with physical, mental, emotional, or educational disabilities. Collect and read information about the agency's activities. Learn about opportunities its members have for training, employment, and education. Discuss what you have learned with your counselor.

**#4** - Do EITHER option A or option B:

**Option A.** Visit TWO of the following locations and take notes about the accessibility to people with disabilities. In your notes, give examples of five things that could be done to improve upon the site and five things about the site that make it friendly to people with disabilities. Discuss your observations with your counselor.

- Your school
- Your place of worship
- A Scouting event or campsite
- A public exhibit or attraction (such as a theater, museum, or park)

**Option B.** Visit TWO of the following locations and take notes while observing features and methods that are used to accommodate people with invisible disabilities. While there, ask staff members to explain any accommodation features that may not be obvious. Note anything you think could be done to better accommodate people who have invisible disabilities. Discuss your observations with your counselor.

- Your school
- Your place of worship
- A Scouting event or campsite
- A public exhibit or attraction (such as a theater, museum, or park)

**#5** - Explain what advocacy is. Do ONE of the following advocacy activities:

- a.** Present a counselor-approved disabilities awareness program to a Cub Scout pack or other group. During your presentation, explain and use person-first language.
  - b.** Find out about disabilities awareness education programs in your school or school system, or contact a disability advocacy agency. Volunteer with a program or agency for eight hours.
  - c.** Using resources such as disability advocacy agencies, government agencies, the internet (with your parent's permission), and news magazines, learn about myths and misconceptions that influence the general public's understanding of people with disabilities. List 10 myths and misconceptions about people with disabilities and learn the facts about each myth. Share your list with your counselor, then use it to make a presentation to a Cub Scout pack or other group.
- #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.

## **Dog Care: *Last year's pre-work. Not confirmed with Counselor for this year***

Read the Dog Care merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/dog-care/>

**#4** - 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.

\* The activities used to fulfill the requirements for the Dog Care merit badge may not be used to help fulfill the requirements for other merit badges.

**#8** - Visit a veterinary hospital or an animal shelter and give a report about your visit to your counselor.

## **Electronics: *Last year's pre-work. Not confirmed with Counselor for this year***

Read the Electronics merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/electronics/>

**#4** - Do the following:

c. Choose ONE of the following three projects. For your project, find or create a schematic diagram. To the best of your ability, explain to your counselor how the circuit you built operates.

- i. A control device
- ii. A digital circuit
- iii. An audio circuit

**#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.

## **Entrepreneurship:**

**Read the Entrepreneurship merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/entrepreneurship/>**

- #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.
  
- #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.

## **Family Life:**

**Read the Family Life merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/family-life/>**

**#3** - 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.  
Discuss with your counselor the effect your chores had on your family.

**#4** - With the approval of your parents or guardians and your merit badge counselor, decide on and carry out a project that you would do around the home that would benefit your family. Submit a report to your merit badge counselor outlining how the project benefited your family.

**#5** - Plan and carry out a project that involves the participation of your family. After completing the project, discuss the following with your merit badge counselor:

- a. The objective or goal of the project
- b. How individual members of your family participated
- c. The results of the project

**#6** - Do the following:

- a. Discuss with your merit badge counselor how to plan and carry out a family meeting.
- b. Prepare a meeting agenda that includes the following topics, review it with your parents or guardians, and then carry out one or more family meetings:
  1. How living the principles of the Scout Oath and Scout Law contributes to your family life
  2. The greatest dangers and addictions facing youth in today's society (examples include use of tobacco products, alcohol, or drugs and other items such as debts, social media, etc.)
  3. Understanding the growing-up process and how the body changes, and making responsible decisions dealing with sex
  4. Personal and family finances
  5. A crisis situation within your family
  6. The effect of technology on your family
  7. Good etiquette and manners

Discussion of each of these subjects will very likely carry over to more than one family meeting.

Note: This conversation may take place with only one or both of your parents or guardians.

**First Aid: *Last year's pre-work. Not confirmed with Counselor for this year***

Read the First Aid merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/first-aid/>

**#1** - Demonstrate to your counselor that you have current knowledge of all first-aid requirements for Tenderfoot, Second Class, and First Class ranks.

**#5** - Do the following:

- a. Prepare a first-aid kit for your home. Display and discuss its contents with your counselor.
- b. With an adult leader, inspect your troop's first-aid kit. Evaluate it for completeness. Report your findings to your counselor and Scout leader.

**#7b (location)** - Identify the location of the AED at your school, place of worship, and troop meeting place, if one is present.



## **Health Care Professions:**

**Read the Health Care Professions merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/health-care-professions/>**

### **COMPLETE ONE OF #1, 2, 3, OR 4**

**#1** - Select three of the professions from Group 1 listed below which interest you, then complete the following:

- a. Briefly describe to your counselor the roles these professionals play in the delivery of health care.
- b. Describe to your counselor the educational and licensing requirements for the professionals you selected.

#### **Group 1:**

- (1) Allopathic physician (MD) — all specialties
- (2) Osteopathic physician (DO) — all specialties
- (3) Podiatrist (DPM)
- (4) Chiropractor (DC)
- (5) Nurse Practitioner (NP)
- (6) Psychologist (PhD or PsyD)
- (7) Optometrist (OD)
- (8) Audiologist (AudD)

**#2** - Select three of the professions from Group 2 listed below which interest you, then complete the following:

- a. Briefly describe to your counselor the roles these professionals play in the delivery of health care.
- b. Describe to your counselor the educational and licensing requirements for the professionals you selected.

#### **Group 2:**

- (1) Physician Assistant (PA)
- (2) Registered Nurse (RN)
- (3) Certified Nurse Midwife (CNM)
- (4) Certified Nurse Assistant (CNA)
- (5) Licensed Practical Nurse (LPN/LVN)

- (6) Nurse Anesthetist (CRNA)
- (7) Pharmacist (PharmD)
- (8) Pharmacy Technician
- (9) Emergency Medical Technician (EMT)/Paramedic

**#3** - Select three of the professions from Group 3 listed below which interest you, then complete the following:

- a. Briefly describe to your counselor the roles these professionals play in the delivery of health care.
- b. Describe to your counselor the educational and licensing requirements for the professionals you selected.

**Group 3:**

- (1) Physical Therapist (DPT)
- (2) Occupational Therapist (OT)
- (3) Orthotist/Prosthetist
- (4) Medical Appliance Technician
- (5) Respiratory Therapist (RT)
- (6) Medical Assistant
- (7) Dietitian (RD)
- (8) Speech-Language Pathologist (Speech Therapist) (SLP)

**#4** - Select three of the professions from Group 4 listed below which interest you, then complete the following:

- a. Briefly describe to your counselor the roles these professionals play in the delivery of health care.
- b. Describe to your counselor the educational and licensing requirements for the professionals you selected.

**Group 4:**

- (1) Biomedical Engineer (BME)
- (2) Medical Technologist
- (3) Phlebotomist
- (4) Radiology Technologist
- (5) Sonographer
- (6) Medical Records Specialist
- (7) Cytopathologist
- (8) Histotechnologist

- #5** - Select one career from any of the lists in Requirements 1, 2, 3, or 4 and arrange to visit that professional at their workplace. Discuss with your counselor the following:
- a. Why did they choose their particular career?
  - b. What do they most like about their job?
  - c. What are their biggest challenges in doing their job?
  - d. Identify the tools/instruments that may be used in their jobs.
  - e. What has been the most surprising aspect of their career?
  - f. What continuing education requirements are required to maintain certification
- #8** - Identify a medical advancement or discovery that has been in the news recently. Discuss with your counselor how this can affect patient care.
- #9** - With approval of your counselor and parents/guardian, serve as a volunteer at a health-related event or facility in your community (e.g. blood drive, health fair, blood pressure screening event). Report to your counselor what you did and learned from the experience.

## **Nuclear Science: *Last year's pre-work. Not confirmed with Counselor for this year***

Read the Nuclear Science merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/nuclear-science/>

- #7 - Give an example of each of the following in relation to how energy from an atom can be used: nuclear medicine, environmental applications, industrial applications, space exploration, and radiation therapy. For each example, explain the application and its significance to nuclear science.
- #8 - Find out about three career opportunities in nuclear science that interest you. Pick one and find out the education, training, and experience required for this profession and discuss this with your counselor. Tell why this profession interests you.

## **Personal Management:**

**Read the Personal Management merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/personal-management/>**

**#1 – Do the following:**

- a. Choose an item that your family might want to purchase that is considered a major expense.
- b. Write a plan that tells how your family would save money for the purchase identified in requirement 1a.
  - (1) Discuss the plan with your merit badge counselor.
  - (2) Discuss the plan with your family.
  - (3) Discuss how other family needs must be considered in this plan.
- c. Develop a written shopping strategy for the purchase identified in requirement 1a.
  - (1) Determine the quality of the item or service (using consumer publications or ratings systems).
  - (2) Comparison shop for the item. Find out where you can buy the item for the best price. (Provide prices from at least two different price sources.)

Call around; study ads. Look for a sale or discount coupon. Consider alternatives. Can you buy the item used? Should you wait for a sale?

**#2 – Do the following:**

- a. Prepare a budget reflecting your expected income (allowance, gifts, wages), expenses, and savings for a period of 13 consecutive weeks.
- b. Compare expected income with expected expenses.
  - (1) If expenses exceed budget income, determine steps to balance your budget.
  - (2) If income exceeds budget expenses, state how you would use the excess money (new goal, savings).
- c. Track and record your actual income, expenses, and savings for 13 consecutive weeks (the same 13-week period for which you budgeted). (You may use the forms provided in this pamphlet, devise your own, or use a computer-generated version.) When complete, present the records showing the results to your merit badge counselor.

- d. Compare your budget with your actual income and expenses to understand when your budget worked and when it did not work. With your merit badge counselor, discuss what you might do differently the next time.

**#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 place of worship 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.

**#9** – **EITHER** prepare ahead of time **OR** be prepared to work on in class a written project plan demonstrating the steps below, including the desired outcome. This is **a project on paper, not a real-life project**. Examples could include planning a camping trip, developing a community service project or a school or religious event, or creating an annual patrol plan with additional activities not already included in the troop annual plan.

- a. Define the project. What is your goal?
- b. Develop a timeline for your project that shows the steps you must take from beginning to completion.
- c. Describe your project.
- d. Develop a list of resources. Identify how these resources will help you achieve your goal.
- e. Develop a budget for your project.

**Pets: *Last year's pre-work. Not confirmed with Counselor for this year***

Read the Pets merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:  
<https://www.scouting.org/merit-badges/pets/>

**#1** - Present evidence that you have cared for a pet for 4 months. Get approval before you start.\*

\* Work done for other merit badges cannot be used for this requirement.

## **Programming:**

**Read the Programming merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/programming/>**

**NOTE: Scouts will need to bring a laptop, Chromebook, or other portable computer as there are none to use onsite.**

**#1a** - View the Personal Safety Awareness "Digital Safety" video (with your parent or guardian's permission).

**#2** – History. Discuss with your counselor the history of programming and the evolution of programming languages, including at least three milestones related to the advancement or development of programming over time.

**#3** – General Knowledge. Do the following:

- a. Create a list of five popular programming languages in use today and describe which industry or industries they are primarily used in and why.
- b. Describe three different programmed devices you rely on every day.

**#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.

**In addition: (Terms used often during class)**

**Know, understand, and be ready to discuss the following terms:**

**program, variable, operand, bit, byte, word, integer, character, float, string, loop, syntax, comment, function, parameter, source code, library, object.**

**Have some algebra knowledge, namely writing equations with variables.**

**Note:** If you take both digital technology and programming, viewing the Personal Safety Awareness "Digital Safety" video and doing the career research will count for both badges.



## **Railroading:**

**READ the Railroading merit badge book and be prepared to describe terms and information from the book.**

**Bring Merit Badge book to class as it is used in the class for discussion.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/railroading/>**

**NOTE: If the scout does not read the book and bring the book to class, the scout will not receive the merit badge.**

**#2 - Do the following:**

- a.** Explain the purpose and formation of Amtrak. Explain, by the use of a timetable, a plan for making a trip by rail between two cities at least 500 miles apart. List the times of departure and arrival at your destination, the train number and name, and the type of service you want.
- b.** List and explain the various forms of public/mass transit using rail.

**#3 - Do ONE of the following:**

- a.** Name four departments of a railroad company. Describe what each department does.
- b.** Tell about the opportunities in railroading that interest you most and why.
- c.** Name four rail support industries, Describe the function of each one.
- d.** With your parent's and counselor's approval, interview someone employed in the rail industry. Learn what that person does and how this person became interested in railroading. Find out what type of schooling and training are required for this position.

## **Scholarship:**

**Read the Scholarship merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/scholarship/>**

**#1 - Do ONE of the following:**

- a.** Show that you have had an average grade 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.

**#3 -** Get a note from the principal\* of your school (or another school official named by the principal) that states that during the past year your behavior, leadership, and service have been satisfactory.

**Email the note to the counselor: Mike Johansen [mjjcmj@chorus.net](mailto:mjjcmj@chorus.net)**

*\*If you are home-schooled or your school environment does not include a principal, you may obtain a note from a counterpart such as your parent.*

**#5 - Do ONE of the following:**

- a.** Write a report of 250 to 300 words about how the education you receive in school will be of value to you in the future and how you will continue to educate yourself in the future.
- b.** Write a report of 250 to 300 words about two careers that interest you and how specific classes and good scholarship in general will help you achieve your career goals.

## **Signs, Signals, and Codes:**

**Read the Signs, Signals, and Codes merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/signs-signals-and-codes/>**

**#4b** - Using illustrations or photographs, identify 10 examples of nautical flags and discuss their importance.

**#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.

## **Space Exploration: *Last year's pre-work. Not confirmed with Counselor for this year***

Read the Pets merit badge book and be prepared to describe terms and information from the book.

Link to requirements & downloadable book:

<https://www.scouting.org/merit-badges/space-exploration/>

**#2** - Design a collector's card, with a picture on the front and information on the back, about your favorite space pioneer. Share your card and discuss four other space pioneers with your counselor.

**# 5** - Do TWO of the following:

- a. Discuss with your counselor a robotic space exploration mission and a historic crewed mission. Tell about each mission's major discoveries, its importance, and what was learned from it about the planets, moons, or regions of space explored.
- b. Using magazine photographs, news clippings, and electronic articles (such as from the Internet), make a scrapbook about a current planetary mission.
- c. Design a robotic mission to another planet, moon, comet, or asteroid that will return samples of its surface to Earth. Name the planet, moon, comet, or asteroid your spacecraft will visit. Show how your design will cope with the conditions of the environments of the planet, moon, comet, or asteroid.

**#6** - Describe the purpose and operation of ONE of the following:

- a. Space shuttle or any other crewed orbital vehicle, whether government owned (U.S. or foreign) or commercial
- b. International Space Station

**#7** - Design an inhabited base located within our solar system, such as Titan, asteroids, or other locations that humans might want to explore in person. 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

**\* We will be discussing the scout's drawings/models of their bases.**

**#8** - Discuss with your counselor two possible careers in space exploration that interest you. Find out the qualifications, education, and preparation required and discuss the major responsibilities of those positions.

## **Theater:**

**Read the Theater merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/theater/>**

**#1** - See or read three full-length plays. Write a review of each. Discuss with your counselor the plot or story. If you chose to watch the plays, comment on the acting and the staging.

**Note: Watching plays on television, video, or as a movie is not permitted.**

**#2** - Write a one-act play that will take at least 10 minutes to perform. The play must have a main character, conflict, and a climax.

## **Veterinary Medicine:**

**Read the Weather merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/veterinary-medicine/>**

### **#6. Do ONE of the following:**

- a.** Visit a veterinary clinic, hospital, or veterinary referral teaching hospital that does work in one of the practices listed in requirement 1. Spend as much time as you can observing the veterinarians and their staff. Prepare a presentation on what you observed and learned at the facility and share with your counselor.
- b.** Spend as much time as possible with a veterinarian who works in one of the fields listed in requirement 2. Learn what special training beyond veterinary medical school may have been required for that position. Learn about any special or unusual activities required of this position. Prepare a presentation and share what you have learned about this field of veterinary medicine with your counselor. Include how this field serves the needs of the general public.

## **Weather:**

**Read the Weather merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/weather/>**

**#8 - Describe how the tilt of Earth's axis helps determine the climate of a region near the equator, near the poles, and across the area in between.**

**#9 - Do ONE of the following:**

- a.** Make one of the following instruments: wind vane, anemometer, rain gauge, 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, NOAA Weather Radio All Hazards, and Internet sources (with your parent's permission). Record the following information 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.
- b.** Visit a National Weather Service office or talk with a local radio or television weathercaster, private meteorologist, local agricultural extension service officer, 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.

**#10 - Give a talk of at least five minutes to a group (such as your unit or a Cub Scout pack) explaining the outdoor safety rules in the event of lightning, flash floods, and tornadoes. Before your talk, share your outline with your counselor for approval.**

**#11 - Find out about a weather-related career opportunity that interests you. Discuss with and explain to your counselor what training and education are required for such a position, and the responsibilities required of such a position.**



## **Woodwork:**

**Read the Woodworking merit badge book and be prepared to describe terms and information from the book.**

**Link to requirements & downloadable book:**

**<https://www.scouting.org/merit-badges/woodwork/>**

**#1c** – Earn the Totin' Chip recognition.

**#5** – Create your own woodworking project. Begin by making working drawings, list the materials you will need to complete your project, and then build your project. Keep track of the time you spend and the cost of the materials.