



Boy Scout Advancement Requirements Changes

**Effective January 1, 2017
with updates through
August 1, 2017.**

The *Guide to Advancement - 2017* and *2017 Boy Scout Requirements* are the official Boy Scouts of America sources on Boy Scout advancement procedures.

When there is a conflict between two published lists of requirements, such as *Boy Scout Requirements* (BSA Publication No. 33216) and a Merit Badge pamphlet or the *Boy Scout Handbook*, the requirements book should normally be considered to be the controlling document, until a newer edition of *Boy Scout Requirements* is issued. However, the following excerpt from the *Guide to Advancement, 2017* explains what to do when merit badge requirements change:

7.0.4.3 What to Do When Requirements Change

The current annual edition of Boy Scout Requirements lists the official merit badge requirements. Once new or revised merit badge requirements appear in this publication, which is released each January, any Scout just beginning work on a merit badge must use the requirements as stated there.

If changes to merit badge requirements are introduced in a revised merit badge pamphlet after the January release of the *Boy Scout Requirements* book, then the Scout has until the following January 1 to decide what to do. He may continue—or

begin work—using the old merit badge requirements and the old pamphlet; or he may switch to—or begin work—using the new requirements and the new pamphlet. Unless it is otherwise stated in the merit badge pamphlet, *Boy Scout Requirements*, or official communications from the National Council, if a Scout chooses to use the old merit badge requirements and pamphlet, he may continue using them until he has completed the badge.

There is no time limit between starting and completing a badge, although a counselor may determine so much time has passed since any effort took place that the new requirements must be used.

During 2015, after multi-year period of review, BSA proposed changes, to the requirements for the Scout badge, which is now officially designated a "rank", as well as to the requirements for all of the ranks from Tenderfoot to Eagle, and for Eagle Palms. These changes, in draft form, were announced during 2015 and changes to some of the draft requirements were made at various times during the year. A new edition of the *Boy Scout Handbook* was issued in January, 2016 and a new edition of *Boy Scout Requirements* was issued in February, 2016, containing the final, approved, requirements. During 2016, which served as a transition period, Scouts could advance to the next rank using the previous requirements. As of January 1, 2017, however, all Scouts must use the current requirements for advancement. Note that there are also a few minor changes to the requirements for Second Class and First Class which took effect on January 1, 2017, as outlined below.

In addition to the changes to the Boy Scout Rank requirements, the new edition of *Boy Scout Requirements* includes one new merit badge, Exploration, and changes to the requirements for 36 merit badges, four with substantial changes, and 32 with minor changes or corrections listed below.

Note that although as of January 1, 2017, the **Exploration** merit badge had not been officially and publicly introduced, the requirements for that merit badge were included in the 2017 edition of *Boy Scout Requirements*, and were posted on the official BSA web site (Scouting.org) in late 2016, and the merit badge pamphlet became available for purchase from Scoutstuff.org and at Scout Shops.

Finally, the "Merit Badge Library" listing on the inside back cover, lists all merit badge pamphlets with their most recent (or planned) publication dates. That listing includes 23 pamphlets with updated publication dates since the 2016 edition. [Click here](#) for our list of all of the merit badge pamphlets, which identifies the most recent edition of each, whether the old pamphlet can still be used, and when the requirements were last revised. Our list also identifies which merit badge pamphlets are available as Kindle books, through [Amazon.com](#), and/or as Digital Interactive merit badge pamphlets through [Scoutstuff.org](#).

Although BSA has previously announced plans to release a few more new merit badges in the coming years, including Multi-Media, Computer Aided Design, and Advanced Computing, no current schedule has been announced for if or when those badges may be available.

RANK CHANGES

Second Class - Effective on January 1 and August 1, 2017

First Class- Effective on January 1 and August 1, 2017

Eagle Palms - Effective on August 1, 2017

NEW Merit Badge

Exploration - Released in November, 2016

REVISED Merit Badges

These merit badges had significant changes:

Disabilities Awareness

Hiking

Pioneering

Radio

These merit badges had minor changes or corrections:

American

Business

Athletics

Automotive

Maintenance

Camping

Climbing

Coin Collecting

Cooking

Dentistry

Dog Care

Fire Safety

Fish and

Landscape

Architecture

Leatherwork

Lifesaving

Music

Nuclear Science

Plumbing

Programming

Pulp and Paper

Rifle Shooting

Safety

Salesmanship

Scholarship

<u>Wildlife</u>	<u>Small Boat</u>
<u>Management</u>	<u>Sailing</u>
<u>Fishing</u>	<u>Sports</u>
<u>Forestry</u>	<u>Traffic Safety</u>
<u>Game Design</u>	<u>Wood Carving</u>
<u>Indian Lore</u>	
<u>Journalism</u>	

**Merit Badge changes published in 2017 after
the release
of the 2017 Boy Scout Requirements book**

Astronomy
Inventing

**In addition to a change made during 2017, the
requirements for the following merit badge
were changed in 2004 but those changes were
never included in any editions of the Boy
Scout Requirements book**

Soil and Water Conservation

Changes to Rank Requirements



Second Class

On January 1, 2017, minor changes were made to the wording of requirement 2d and 8e. The changes to the wording are as follows:

2. d. Explain when it is appropriate to use a lightweight stove and when it is appropriate to use a propane stove. Set up a lightweight stove or propane stove. ~~Light the stove, unless~~ **Unless** prohibited by local fire restrictions, **light the stove**. Describe the safety procedures for using these types of stoves.

8. e. Participate in two hours of service through one or more service projects approved by your Scoutmaster. **Tell Explain** how your service to others relates to the Scout Oath.

On August 1, 2017, additional changes were made to requirement 1a, and a new footnote was added to requirements 5b and 5c. The changes to the wording are as follows:

1. a. Since joining Boy Scouts, participate in five separate troop/patrol activities, at least three of which must be held outdoors. Of the outdoor activities, at least two must include overnight camping. These *five* activities do not include troop or patrol meetings. On *at least two of the three* campouts, spend the night in a tent that you pitch or other structure that you help erect, (such as a lean-to, snow cave, or tepee.)
5. b. Demonstrate your ability to pass the BSA beginner test. Jump feetfirst into water over your head in depth, level off and swim 25 feet on the surface, stop, turn sharply, resume swimming, then return to your starting place.³
- c. Demonstrate water rescue methods by reaching with your arm or leg, by reaching with a suitable object, and by throwing lines and objects.³

³Under certain exceptional conditions, where the climate keeps the outdoor water temperature below safe levels the year-round, or where there are no suitably safe and accessible places (outdoors or indoors) within a reasonable traveling distance to swim at any time during the year, the council Scout executive and advancement committee may, on an individual Scout basis, authorize an alternative requirement. The local council may establish appropriate procedures for submitting and processing these types of requests. All the other requirements, none of which necessitate entry in the water or entry in a watercraft on the water, must be completed as written.



First Class

On January 1, 2017, a change was made to the wording of requirement 8b. The change to the wording is as follows:

8. b. Share your challenges and successes in completing First Class requirement 8a. Set a goal for continuing to include physical activity as part of your daily life and develop a plan for doing so.

On August 1, 2017, additional changes were made to requirement 1a, and a new footnote was

added to requirements 6a and 6e. The changes to the wording are as follows:

1. a. Since joining Boy Scouts, participate in 10 separate troop/patrol activities, at least six of which must be held outdoors. Of the outdoor activities, at least three must include overnight camping. These **10** activities do not include troop or patrol meetings. On **at least five of the six** campouts, spend the night in a tent that you pitch or other structure that you help erect, ~~or~~ (such as a lean-to, snow cave, or tepee.)
6. a. Successfully complete the BSA swimmer test.^{3&4}
 - e. With a helper and a practice victim, show a line rescue both as tender and rescuer. (The practice victim should be approximately 30 feet from shore in deep water.)⁴

⁴Under certain exceptional conditions, where the climate keeps the outdoor water temperature below safe levels the year-round, or where there are no suitably safe and accessible places (outdoors or indoors) within a reasonable traveling distance to swim at any time during the year, the council Scout executive and advancement committee may, on an individual Scout basis, authorize an alternative requirement. The local council may establish appropriate procedures for submitting and processing these types of requests. All the other requirements, none of which necessitate entry in the water or entry in a watercraft on the water, must be completed as written.



Eagle Palms

In July, BSA announced significant changes to the way Scouts earn Eagle Palms, to take effect on August 1, 2017. The changes bring Eagle Palm requirements in line with the needs of older Scouts. The National Boy Scouting Subcommittee eliminated unnecessary obstacles, such as the Eagle Palm board of review, and expanded the definition of active participation. In addition, as a result of a change that affects young men who haven't yet earned Eagle, Palms representing additional merit badges earned beyond the 21 required for the Eagle Scout rank may be awarded instantly to new Eagle Scouts at their Eagle court of honor. This abolishes the wait of months or years for these young men to receive all Palms available to them.

Effective on August 1, 2017, the wording of the introduction to the requirements was changed and a new provision added, changes were made to the wording of requirements 1 and 3, and requirement 6 was deleted. The changes are as follows:

After successfully completing your Eagle Scout board of review and being validated as an Eagle Scout by the National Service Center, you will be entitled to receive an Eagle Palm for each additional 5 merit

badges you have completed before your Eagle Scout board of review.
For these Palms only, it will not be necessary for you to complete any of the requirements stated below.

After becoming an Eagle Scout, you may earn **additional** Palms by completing the following requirements:

1. Be active in ~~your troop and patrol~~ **the Boy Scouts of America** for at least 3 months after becoming an Eagle Scout or after ~~the award of last Palm~~ **the last Palm was earned**.**
3. ~~Make a satisfactory effort to develop and demonstrate leadership ability.~~
Continue to set a satisfactory example of accepting responsibility or demonstrating leadership ability.
6. ~~Successfully complete your board of review for the Eagle Palm.~~

NEW Merit Badge



Exploration

This is a NEW Merit Badge that was made available without publicity late in 2016.

The requirements are as follows:

1. **General Knowledge.**
 Do the following:
 - a. Define exploration and explain how it differs from adventure travel, trekking or hiking, tour-group trips, or recreational outdoor adventure trips.
 - b. Explain how approaches to exploration may differ if it occurs in the ocean, in space, in a jungle, or in a science lab in a city.
2. **History of Exploration.**
 Discuss with your counselor the history of exploration. Select a field of study with a history of exploration to illustrate the importance of exploration in the development of that field (for example, aerospace, oil industry, paleontology, oceanography, etc.).
3. **Importance of Exploration.**
 Explain to your counselor why it is important to explore. Discuss the following:
 - a. Why it is important for exploration to have a scientific basis
 - b. How explorers have aided in our understanding of our world
 - c. What you think it takes to be an explorer
4. **Real-Life Exploration.**
 Do ONE of the following:
 - a. Learn about a living explorer. Create a short report or presentation (verbal, written, or multimedia slide presentation) on this individual's objectives and

the achievements of one of the explorer's expeditions. Share what you have learned with your counselor and unit.

- b. Learn about an actual scientific exploration expedition. Gather information about the mission objectives and the expedition's most interesting or important discoveries. Share what you have learned with your counselor and unit. Tell how the information gained from this expedition helped scientists answer important questions.
- c. Learn about types of exploration that may take place in a laboratory or scientific research facility (medicine, biology, chemistry, physics, astronomy, etc.). Explain to your counselor how laboratory research and exploration are similar to field research and exploration.

5. Exploration in Lab and Field.

Do ONE of the following, and share what you learn with your counselor:

- a. With your parent's permission and counselor's approval, visit either in person or via the internet an exploration sponsoring organization (such as The Explorers Club, National Geographic Society, Smithsonian Institution, Alpine Club, World Wildlife Fund, or similar organization). Find out what type(s) of exploration the organization supports.
- b. With permission and approval, visit either in person or via the internet a science lab, astronomical observatory, medical research facility, or similar site. Learn what exploration is done in this facility.

6. Expedition Planning.

Discuss with your counselor each of the following steps for conducting a successful exploration activity. Explain the need for each step.

- a. Identify the objectives (establish goals).
- b. Plan the mission. Create an expedition agenda or schedule. List potential documents or permits needed.
- c. Budget and plan for adequate financial resources. Estimate costs for travel, equipment, accommodations, meals, permits or licenses, and other expedition expenses.
- d. Determine equipment and supplies required for personal and mission needs for the length of the expedition.
- e. Determine communication and transportation needs. Plan how to keep in contact with your base or the outside world, and determine how you will communicate with each other on-site.
- f. Establish safety and first aid procedures (including planning for medical evacuation). Identify the hazards that explorers could encounter on the expedition, and establish procedures to prevent or avoid those hazards.
- g. Determine team selection. Identify who is essential for the expedition to be successful and what skills are required by the expedition leader.
- h. Establish detailed recordkeeping (documentation) procedures. Plan the interpretation and sharing of information at the conclusion of the expedition.

7. Prepare for an Expedition.

With your parent's permission and counselor's approval, prepare for an actual expedition to an area you have not previously explored; the place may be nearby or far away. Do the following:

- a. Make your preparations under the supervision of a trained expedition leader,

- expedition planner, or other qualified adult experienced in exploration (such as a school science teacher, museum representative, or qualified instructor).
- b. Use the steps listed in requirement 6 to guide your preparations. List the items of equipment and supplies you will need. Discuss with your counselor why you chose each item and how it will be of value on the expedition. Determine who should go on the expedition.
 - c. Conduct a pre-expedition check, covering the steps in requirement 6, and share the results with your counselor. With your counselor, walk through the Sweet Sixteen of BSA Safety for your expedition. Ensure that all foreseeable hazards for your expedition are adequately addressed.
- 8. Go on an Expedition.**
Complete the following:
- a. With your parent's permission and under the supervision of your merit badge counselor or a counselor-approved qualified person, use the planning steps you learned in requirement 6 and the preparations you completed in requirement 7 to personally undertake an actual expedition to an area you have not previously explored.
 - b. Discuss with your counselor what is outdoor ethics and its role in exploration and enjoying the outdoors responsibly.
 - c. After you return, compile a report on the results of your expedition and how you accomplished your objective(s). Include a statement of the objectives, note your findings and observations, include photos, note any discoveries, report any problems or adverse events, and have a conclusion (whether you reached your objective or not). The post-expedition report must be at least one page and no more than three; one page can be photos, graphs, or figures.
- 9. Career Opportunities.**
Identify three career opportunities in exploration. Pick one and explain to your counselor how to prepare for such a career. Discuss what education and training are required, and why this profession might interest you.

REVISED Merit Badges



Disabilities Awareness

Changes were made to requirements 1 (now 1a and 1b), 3a, 3b, 3d, and 4 (now 4 - Option A). A new item 3e was added, and an Option B was added to requirement 4.

The changes to the requirements are as follows:

1. **Do the following:**
 - a. ~~1. Discuss~~ **Define and discuss** with your counselor ~~proper disability etiquette~~ **the following disabilities awareness terms: disability, accessibility, adaptation, accommodation, invisible disability,**

and person first language. *Explain why these are important.*

- b. **Explain why proper disability etiquette is important, and how it may differ depending on the specific disability.**
3. Do TWO of the following:
- a. Talk ~~to~~ **with** a Scout who has a disability and learn about his experiences taking part in Scouting activities and earning different merit badges. Discuss what you have learned with your counselor.
 - b. Talk ~~to~~ **with** an individual who has a disability and learn about this person's experiences and the activities in which this person likes to participate. Discuss what you have learned with your counselor.
 - c. Learn how people with disabilities take part in a particular adaptive sport or recreational activity. Discuss what you have learned with your counselor.
 - d. Learn about independent living aids such as service animals, canes, and augmentative communication devices such as *teletypewriters (TTYs)* **captioned telephones and videophones**. Discuss with your counselor how people use such aids.
 - e. **Plan or participate in an activity that helps others understand what a person with a visible or invisible disability experiences. Discuss what you have learned with your counselor.**
4. **Do EITHER option A or option B:**

Option A. ~~4.~~ 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.

- a. Your school
- b. Your place of worship
- c. ~~Your Scout camping site~~ **A Scouting event or campsite**
- d. 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.

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



Hiking

A new merit badge pamphlet with revised requirements was issued in 2016 after the release of *Boy Scout Requirements 2016*. The list of injuries and illnesses in requirement 1b was rearranged, requirement 2 was revised, requirements 4 and 5 were replaced with new requirement 4, requirements 6 and 7 were revised and renumbered as 5 and 6, and the footnote was revised. (There were no changes to requirements 1a and 3.) The changes are as follows:

1. Do the following:
 - a. Explain to your counselor the most likely hazards you may encounter while hiking, and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
 - b. Show that you know first aid for injuries or illnesses that could occur while hiking, including hypothermia, ~~heatstroke, heat exhaustion~~, frostbite, dehydration, **heat exhaustion, heatstroke**, sunburn, **hyperventilation, altitude sickness**, sprained ankle, **blisters**, insect stings, tick bites, **and** snakebite, ~~blisters, hyperventilation, and altitude sickness~~.
2. Explain and, where possible, show the points of good hiking practices. including ~~the principles of Leave No Trace~~ **proper outdoor ethics**, hiking safety in the daytime and at night, courtesy to others, choice of footwear, and proper care of feet and footwear.
3. Explain how hiking is an aerobic activity. Develop a plan for conditioning yourself for 10-mile hikes, and describe how you will increase your fitness for longer hikes.
4. ~~Make a written plan for a 10-mile hike, including map routes, a clothing and equipment list, and a list of items for a trail lunch.~~

Take the five following hikes, each on a different day, and each of continuous miles. These hikes MUST be taken in the following order:

One 5-mile hike

Three 10-mile hikes

One 15-mile hike

You may stop for as many short rest periods as needed, as well as one meal, during each hike, but not for an extended period (example: overnight). Prepare a written hike plan before each hike and share it with your Scoutmaster or a designee. Include map routes, a clothing and equipment list, and a list of items for a trail lunch. *

5. ~~Take five hikes, each on a different day, and each of at least ten continuous miles. You may stop for as many short rest periods as needed, as well as one meal, during each hike, but not for an extended period (example: overnight). Prepare a hike plan for each hike.*~~
6. Take a hike of 20 continuous miles in one day following a hike plan you have

prepared. **You may stop for as many short rest periods as needed, as well as one meal, but not for an extended period (example: overnight).***

6. ~~7.~~ After each of the hikes (or during each hike if on one continuous "trek") in requirements ~~5 and 6~~ **4 and 5**, write a short *report* **reflection** of your experience. Give dates and descriptions of routes covered, the weather, and **any** interesting things you saw. **It may include something you learned about yourself, about the outdoors, or about others you were hiking with.** Share this *report* with your merit badge counselor.

* The **required** hikes *in requirements 5 and 6 can* **for this badge may** be used in fulfilling *Second Class (2a) and First Class (3) rank requirements, but only if Hiking merit badge requirements 1, 2, 3, and 4 have been completed to the satisfaction of your counselor. The hikes of requirements 5 and 6* **hiking requirements for rank advancement. However, these hikes** *cannot* be used to fulfill requirements of other merit badges.



Pioneering

Changes were made to requirements 1b, 2a, 2b, 2c, and 6-10. The changes to the requirements are as follows:

1. b. Discuss the prevention of, and first aid treatment for, injuries and conditions that could occur while working on pioneering projects, including **rope splinters, rope burns**, cuts, scratches, insect bites and stings, *rope burns*, hypothermia, dehydration, heat exhaustion, heatstroke, sunburn, and falls.
2. a. *Successfully complete Tenderfoot requirements 4a and 4b and First Class requirements 7a, 7b, and 8a. (These are the rope-related requirements.)* **Demonstrate the basic and West Country methods of whipping a rope. Fuse the ends of a rope**
 b. **Demonstrate how to tie** *Tie* the following **knots**: *square knot, bowline, sheepshank, sheet bend, and* **clove hitch, butterfly knot**, roundturn with two half hitches, **rolling hitch, water knot, carrick bend, sheepshank, and sheet bend.**
 c. Demonstrate **and explain when to use** the following **lashings**: **square, diagonal, round, shear**, tripod, and *round lashings* **floor lashing.**
6. Using a rope-making device or machine, make a rope at least 6 feet long consisting of three strands, each having three yarns. **Whip the ends.**
7. *Build a scale model of a signal tower or a monkey bridge. Correctly anchor the model using either the 1-1-1 anchoring system or the log and stake anchoring*

method. Describe the design of your project and explain how the anchoring system works.

Explain the importance of effectively anchoring a pioneering project. Describe to your counselor the 1-1-1 anchoring system and the log-and-stake anchoring methods.

8. *Demonstrate the use of rope tackle to lift a weight of 25 pounds and pulling a log at least 6 inches in diameter and 6 feet long with the tackle. Use the tackle to put tension on a line. With the approval of your counselor, demonstrate and use a rope tackle. Be sure the rope tackle is secured properly.* Explain the advantages and limitations of using a rope tackle. *In your explanation, describe Describe the potential damage that friction can do to a rope.*

All pioneering projects constructed for this merit badge must comply with height standards as outlined in the Guide to Safe Scouting.

9. By yourself, build ~~an A-trestle OR X-trestle OR H-trestle~~ **a trestle** using square and diagonal lashings. Explain *the application of the trestle you build. Demonstrate how to tie two spars together using a shear lashing.* **why trestles are used when constructing pioneering projects.**
10. *With a group of Scouts, OR on your own, select a pioneering project and get your counselor's approval before you begin building. Your project must not result in anyone reaching a height of greater than 6 feet off the ground. With your counselor's guidance, create a rough sketch of the project. Make a list of the ropes and spars needed, then build the project. (Note: This requirement may be done at summer camp, at district or council events, or on a troop camp outing.)*

With the approval of your counselor and using appropriate lashings and pioneering techniques, build and use one full-size pioneering project from either group A or group B. Your project must comply with the requirements of the Guide to Safe Scouting. (Requirement 10 may be done at summer camp, at district or council events, or on a troop camp outing.)

Group A: Tower OR bridge

Anchor your project as appropriate and necessary.

Explain how your anchoring system works.

Group A projects may be worked on in a group and with others.

Group B: Camp chair OR camp table

Group B projects must be worked on individually.



Radio

Changes were made to most of the requirements, and a new "Amateur Radio Direction Finding" option was added to requirement 9 as option d.

The requirements, with the changes identified, are as follows:

1. Explain what radio is. Then discuss the following:
 - a. The differences between broadcast radio and hobby radio.
 - b. The differences between broadcasting and two-way communications.
 - c. Radio call signs and how they are used in broadcast radio and amateur radio
 - d. The phonetic alphabet and how it is used to communicate clearly.
2. Do the following:
 - a. Sketch a diagram showing how radio waves travel locally and around the world. *Explain how the broadcast radio stations, WWV and WWVH can be used to help determine what you will hear when you listen to a shortwave radio?*
 - b. **Explain how the broadcast radio stations, WWV and WWVH can be used to help determine what you will hear when you listen to a shortwave radio?**
 - c. ~~b.~~ Explain the difference between a **distant (DX)** ~~DX~~ and a local station. *Discuss what the Federal Communication Commission (FCC) does and how it is different from the International Telecommunication Union.*
 - d. **Discuss what the Federal Communication Commission (FCC) does and how it is different from the International Telecommunication Union.**
3. Do the following:
 - a. Draw a chart of the electromagnetic spectrum covering ~~100~~ **300** kilohertz (kHz) to ~~1000~~ **3000** 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 amateur radio bands), and public service (police and fire).
4. Explain how radio waves carry information. Include in your explanation: transceiver, transmitter, receiver, amplifier, and antenna.
5. Do the following:
 - a. Explain the differences between a block diagram and a schematic diagram.
 - b. Draw a block diagram for a radio station that includes a transceiver, amplifier, microphone, antenna, and feed line.
 - c. *Explain the differences between an open circuit a closed circuit, and a short circuit.*
Discuss how information is sent when using amplitude modulation (AM), frequency modulation (FM), continuous wave (CW) Morse Code transmission, single sideband (SSB) transmission, and digital transmission.
 - d. ~~Draw eight schematic symbols. Explain what three of the represented parts do.~~

Find three electrical components to match to three of these symbols:

Explain how NOAA Weather Radio (NWR) can alert you to danger.

- e. **Explain how cellular telephones work. Identify their benefits and limitations in an emergency.**
6. Explain the safety precautions for working with radio gear, including the concept of grounding for direct current circuits, power outlets, and antenna systems.
 7. Visit a radio installation (an amateur radio station, broadcast station, or public communications center, for example) approved in advance by your counselor. Discuss what types of equipment you saw in use, how it was used, what types of licenses are required to operate and maintain the equipment, and the purpose of the station.
 8. Find out about three career opportunities in radio. 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.
 9. Do ONE of the following: (a OR b OR c **OR d**)
 - a. ~~AMATEUR RADIO~~ **Amateur Radio**
 1. Tell why the FCC has an amateur radio service. Describe *some of the* activities that amateur radio operators can do on the air, once they have earned an amateur radio license.
 2. ~~Using proper call signs, Q signals, and abbreviations, carry on a 10 minute real or simulated radio contact using voice, Morse Code, or digital mode. (Licensed amateur radio operators may substitute five QSL cards as evidence of contacts with amateur radio operators from at least three different call districts.) Properly log the real or simulated ham radio contact and record the signal report.~~
 - Explain differences between the Technician, General, and Extra Class license requirements and privileges.**
 - Explain who administers amateur radio exams.**
 3. Explain at least five Q signals or amateur radio terms *you hear while listening.*
 4. ~~Explain some of the differences between the Technician, General, and Extra Class license requirements and privileges. Explain who administers amateur radio exams.~~
 5. Explain how you would make an emergency call on voice or Morse code.
 6. Explain the differences between handheld transceivers and home "base" transceivers. Explain the uses of mobile amateur radio transceivers and amateur radio repeaters.
 6. **Using proper call signs, Q signals, and abbreviations, carry on a 10-minute real or simulated amateur radio contact using voice, Morse code, or digital mode.**
(Licensed amateur radio operators may substitute five QSL cards as evidence of contacts with five amateur

radio operators. Properly log the real or simulated ham radio contact, and record the signal report.)

- b. **BROADCAST RADIO Radio Broadcasting**
1. **Discuss with your counselor FCC broadcast regulations. Include power levels, frequencies, and the regulations for low-power stations.**
 2. ~~1.~~ Prepare a program schedule for radio station "KBSA" of exactly one-half hour, including music, news, commercials, and proper station identification. Record your program on audiotape or in a digital audio format using proper techniques.
 3. ~~2.~~ Listen to and properly log 15 broadcast stations Determine the program format and target audience for five of these stations.
 4. ~~3.~~ Explain **to your counselor** at least eight terms used in commercial broadcasting, such as segue, cut, fade, continuity, remote, Emergency Alert System, network, cue, dead air, PSA, and *playlist* **play list.**
 5. **Discuss with your counselor alternative radio platforms such as internet streaming, satellite radio, and podcasts.**
- c. **SHORTWAVE LISTENING Shortwave and Medium-Wave Listening**
1. Listen across several shortwave bands for four one-hour periods - at least one period during daylight hours and at least one period at night. Log the stations properly and locate them geographically on a *globe* **globemap, globe, or web-based mapping service.**
 2. ~~For several major foreign stations (BBC in Great Britain or HCJB in Ecuador, for example), list several frequency bands used by each.~~ **Listen to several medium-wave stations for two one-hour periods, one period during daylight hours and one period at night. Log the stations properly and locate them on a map, globe, or web-based mapping service.**
 3. Compare your daytime and nighttime **shortwave** logs; note the frequencies on which your selected stations were loudest during each session. Explain the differences in the signal strength from one period to the next.
 4. **Compare your medium-wave broadcast station logs and explain why some distant stations are heard at your location only during the night.**
 5. **Demonstrate listening to a radio broadcast using a smartphone/cell phone. Include international broadcasts in your demonstration.**
- d. **Amateur Radio Direction Finding**
1. **Describe amateur radio direction finding and explain**

why direction finding is important as both an activity and in competition.

2. Describe what frequencies and equipment are used for ARDF or fox hunting.
3. Build a simple directional antenna for either of the two frequencies used in ARDF.
4. Participate in a simple fox hunt using your antenna along with a provided receiver.
5. Using your receiver, show on a map how you located the "fox".



American Business

Requirements 1c and 2c were added and requirements 2c-2e renumbered as 2d-2f. The changes to the requirements are as follows:

1. c. Identify and describe to your counselor the five primary areas of business.
2. c. Describe to your counselor green marketing and sustainable business practices.
 - d. ~~e.~~ Explain how a proprietorship or partnership gets its capital. Discuss and explain four ways a corporation gets its capital.
 - e. ~~d.~~ Explain the place of profit in business.
 - f. ~~e.~~ Name five kinds of insurance useful to business. Describe their purposes.



Athletics

Changes were made to requirement 3, and to requirement 5-Group 6-a

The changes to the requirements are as follows:

3. Select an athletic activity ~~to participate in for one season (or four months)~~ that interests you. Then do the following:
 - a. With guidance from your counselor, establish a personal training program suited to the activity you have chosen. Follow this training program for four months.
 - b. ~~Organize~~ Create a chart ~~for this activity and~~ to monitor your progress during this time.
 - c. Explain to your counselor the equipment necessary to participate in this activity, and the appropriate clothing for the ~~season and the locale~~ time of

- year.
- d. At the end of *the season* **four months, review the chart you created for requirement 3b, and**, discuss with your counselor *the what* progress you have made during training *and competition and* . **Tell** how your development has affected you mentally and physically.
5. ○ Group 6: Baseball Throw
- a. Baseball throw for accuracy, 10 throws **at a target (distance to be determined by age):**
ages 11 to 12, 20 feet; ages 13 to 15, 30 feet; ages 16 to 17, 40 feet



Automotive Maintenance

Changes were made to requirements 2c, 2e, 2f, 2h, 6a, 8b, and 9d. The changes to the requirements are as follows:

2. c. Locate the fuse boxes; determine the **type and** size of fuses. Demonstrate the proper replacement of burned-out fuses.
- e. Check the *lighting in the* vehicle **for proper operation of its lights,** including **the interior overhead lights,** instrument **lights,** warning **lights,** and exterior bulbs.
- f. Locate and check the air filter**(s).**
- h. Find out the requirements for *the state inspection in* your *state,* **state's emissions and safety inspections (as applicable),** including how often a vehicle needs to be inspected.
6. a. Explain the need for coolant in the cooling system, **and the importance of selecting the correct coolant type for a given vehicle.**
8. b. Explain the *cylinder engine sequence* **engine's firing order.**
9. d. Explain the types of lubricants used in a standard transmission and in the differential **and transfer case.**



Camping

New requirement 1b was added, and existing requirement 1b was renumbered as 1c. Requirements 9b1 and 9c were revised, (but see the notes below). The changes to the requirements are as follows:

1. b. **Discuss with your counselor why it is important to be aware of weather conditions before and during your camping**

activities. Tell how you can prepare should the weather turn bad during your campouts.

- c. ~~b.~~ Show that you know first aid for and how to prevent injuries or illnesses that could occur while camping, including hypothermia, frostbite, heat reactions, dehydration, altitude sickness, insect stings, tick bites, snakebite, blisters, and hyperventilation.
9. b. 1. Hike up a mountain, ~~gaining~~ **where, at some point, you are** at least 1,000 ~~vertical~~ feet **higher in elevation from where you started.**
- c. Perform a conservation project approved by the landowner or land managing agency. **This can be done alone or with others.**

The wording of requirement 9b1 (shown above) in the merit badge pamphlet is different than the wording in Boy Scout Requirements 2017, which did not change, and reads:
"Hike up a mountain, gaining at least 1,000 vertical feet."

Similarly, the wording of requirement 9c (shown above) in the merit badge pamphlet is different than the wording in Boy Scout Requirements 2017, which also did not change, and omits the last sentence. However, the 2016 edition of Boy Scout Requirements included a footnote reading: "The Scout may choose to do requirement 9c alone or with others." which had the same effect.



Climbing

Changes were made to requirement 8. The changes to the requirement are as follows:

8. **Harnesses.** Correctly put on *at least ONE of the following:* **a commercially made climbing harness**
- a. Commercially made climbing harness*
 - b. Tied harness*



Coin Collecting

Changes were made to requirement 6. The changes to the requirements are as follows:

6. Describe the 1999-2008 50 State Quarters® **program or the America the Beautiful Quarters®** Program. Collect and show your counselor five different quarters **from circulation** you have acquired from *circulation* **one of these programs.**



Cooking

Changes were made to requirements 3c, 4, 5a, and 5d. The changes to the requirements are as follows:

3. c. Describe ~~with~~ **for** your counselor how to manage your time when preparing a meal so components for each course are ready to serve at the ~~same~~ **correct** time.
4. **Cooking at Home.** Using the MyPlate food guide or the current USDA nutrition model, plan ~~a menu~~ **menus** for three full days of meals (three breakfasts, three lunches, and three dinners) plus one dessert. Your ~~menu~~ **menus** should include enough to feed yourself and at least one adult, keeping in mind any special needs (such as food allergies) and how you kept your foods safe and free from cross-contamination. List the equipment and utensils needed to prepare and serve these meals.
Then do the following:
 5. a. Using the MyPlate food guide or the current USDA nutrition model, plan ~~a menu~~ **five meals** for your patrol (or a similar size group of up to eight youth, including you) for a camping trip. Your ~~menu~~ **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.
 - d. In the outdoors, using your menu ~~plan~~ **plans** for this requirement, cook two of the five meals you planned using either a lightweight stove or a low-impact fire. Use a different cooking method from requirement 3 for each meal. You must also cook a third meal using either a Dutch oven OR a foil pack OR kabobs. Serve all of these meals to your patrol or a group of youth. **



Dentistry

Changes were made to requirement 7. The changes to the requirement are as follows:

7. ~~Find out~~ **Learn** about ~~three~~ career opportunities ~~in dentistry. Pick one and find~~ **for both Doctor of Dental Surgery (D.D.S.) and auxiliary dental professions. Pick either general dentistry OR a dental specialty, plus one auxiliary dental profession. Find** out **about** the education, training, and experience required for ~~this profession~~ **these two professions**. Discuss ~~this~~ **these** with your counselor, and explain why ~~this profession might~~ **these professions** interest you.



Dog Care

New requirement 6f was added when a new merit badge pamphlet was issued in 2016. The new requirement reads as follows:

6. f. Discuss with your counselor the considerations and advantages of spaying or neutering your dog.



Fire Safety

Changes were made to requirements 1a, 4, 5, and 9a, a new requirement 1c was added and another new requirement was added.

In the *2017 Boy Scout Requirements* book, the second new requirement is listed as new requirement 12, and existing requirement 12 was renumbered as 13.

The changes to the requirements (as they appear in the *2017 Boy Scout Requirements* book) are as follows:

1. a. Demonstrate the technique of stop, drop, cover, roll, cover your face, and cool. Explain how burn injuries can be prevented.
 - c. Explain how to safely discard and store flammable liquids.
4. *Do the following:*

Explain the role of human behavior in the arson problem in this country

 - a. *Explain the role of human behavior in the arson problem in this country*
 - b. *List the actions that cause seasonal fires and explain how these fires can be prevented.*
5. List the actions and common circumstances that cause seasonal and holiday-related fires. Explain *and explain* how these fires can be prevented.
9. a. *Demonstrate the safe way to fuel a lawnmower:*

Describe for your counselor the safe way to refuel a liquid fuel engine, such as a lawn mower, weed eater, an outboard motor, farm machine, or an automobile with gas from an approved gas can.
12. Determine if smoke detectors are required in all dwellings within your municipality. If so, explain which specific types are required. Tell your counselor what type of smoke detectors your house has or needs.
13. ~~12.~~ Choose a fire safety-related career that interests you and describe the level of

education required and responsibilities of a person in that position. Tell why this position interests you.

In the 2016 edition of the *Fire Safety* merit badge pamphlet, requirement 3 was renumbered as 3a, and the second new requirement was added as 3b, containing the text which is shown as new requirement 12 in the 2017 *Boy Scout Requirements* book.

The changes adding this second new requirement as they appear in the 2016 edition of the *Fire Safety* merit badge pamphlet are shown below:

3. **Do the following:**
 - a. Name the most frequent causes of fire in the home and give examples of ways they can be prevented. Include a discussion about fires caused by smoking in the home, cooking, candles, fireplaces, and electrical appliances.
 - b. **Determine if smoke detectors are required in all dwellings within your municipality. If so, explain which specific types are required. Tell your counselor what type of smoke detectors your house has or needs.**
12. Choose a fire safety-related career that interests you and describe the level of education required and responsibilities of a person in that position. Tell why this position interests you.



Fish and Wildlife Management

Changes were made to requirements 5c, 6b, 6c, and 8. The changes to the requirements are as follows:

5. c. ***Design* Develop** and implement **a fishery improvement project or** a backyard wildlife habitat improvement project ***and report***. **Share** the results **with your counselor.**
6. b. List the wildlife species in your state that are classified as endangered, threatened, exotic, **non-native**, game species, furbearers, or migratory game birds. **Discuss with your counselor management practices in place or being developed for at least three of these species.**
 - c. Start a scrapbook of North American **fish and** wildlife. Insert markers to divide the book into separate parts for mammals, birds, reptiles, amphibians, and fish. Collect articles on such subjects as life histories, habitat, behavior, and feeding habits on all of the five categories and place them in your notebook accordingly. Articles and pictures may be taken from newspapers or science, nature and outdoor magazines; or from other sources including the Internet (with your parent's permission). Enter at least five articles on mammals, five on birds, five on reptiles, five on amphibians, and five on fish. Put each animal **on a separate sheet** in alphabetical order. Include

pictures whenever possible.

8. Using resources found at the library and in periodicals, books, and the Internet (with your parent's permission), learn about three different *kinds-of-work-done* **positions held** by *fish-and-wildlife-managers* **fisheries and/or wildlife professionals**. Find out the education and training requirements for each position.
-



Fishing

Changes were made to requirement 4 and Requirement 9 was split into requirements 9 and 10. The changes to the requirements are as follows:

4. Demonstrate how to tie the following knots: improved clinch **knot**, Palomar **knot**, *turtle, blood loop (barrel knot), and double surgeon's loop*, **uni knot, uni to uni knot, and arbor knot**. Explain how and when each knot is used.
 9. Catch at least one fish and identify it. *If regulations and health concerns permit, clean and cook a fish you have caught. Otherwise, acquire a fish and cook it.*
 10. **If regulations and health concerns permit, clean and cook a fish you have caught. Otherwise, acquire a fish and cook it. (You do not need to eat your fish.)**
-



Forestry

A new merit badge pamphlet with a copyright date of 2015 was issued but the 2016 edition of *Boy Scout Requirements* did not include the changes. New requirement 6 was added, old requirements 6 & 7 were renumbered as 7 and 8, with some changes made to requirements 7a and 7b (old 6a & 6b). The changes to the requirements are as follows:

6. **In your camp, local recreation area (park or equivalent), or neighborhood, inventory the trees that may be a hazard to structures or people. Make a list by area (campsite, road, trail, street, etc.). Note the species and hazardous condition, and suggest a remedy (removal or trimming). Make your list available to the proper authority or agency.**
7. ~~6.~~ Do the following:
 - a. Describe the consequences to forests that result from FIVE of the following elements: wildfire, absence of fire, *insects* **destructive insects, loss of pollinating insect population**, tree diseases, air pollution, overgrazing, deer or other wildlife overpopulation, improper harvest, and urbanization.
 - b. Explain what can be done to reduce the consequences you discussed in ~~6a~~ **7a**.
 - c. Describe what you should do if you discover a forest fire and how a

professional firefighting crew might control it. Name your state or local wildfire control agency.

8. ~~7~~. Visit one or more local foresters and write a brief report about the person (or persons). Or, write about a forester's occupation including the education, qualifications, career opportunities, and duties related to forestry.



Game Design

Changes were made to requirements 6a, 6b, and 6c. The changes to the requirements are as follows:

6.
 - a. Prototype your game from requirement 5. If applicable, demonstrate to your counselor that you have addressed player safety through the rules and equipment. **Record your work in your game design notebook.**
 - b. Test your prototype with as many other people as you need to meet the player format. Compare the play experience to your descriptions from requirement 5b. Correct unclear rules, holes in the rules, dead ends, and obvious rule exploits. Change at least one rule, mechanic, or objective from your first version of the game, and describe why you are making the change. Play the game again. Record **in your game design notebook** whether or not your change had the expected effect.
 - c. Repeat 6b at least two more times **and record the results in your game design notebook**



Indian Lore

A new requirement 1 was added, causing old requirements 1-4 to be renumbered as 2-5, and changes were made to requirements 5a, and 5c, and 5i. The changes to the requirements are as follows:

1. **Identify the different American Indian cultural areas. Explain what makes them each unique.**
2. ~~1~~. Give the history of one American Indian tribe, group or nation that lives or has lived near you. Visit it, if possible. Tell about traditional dwellings, way of life, tribal government, religious beliefs, family and clan relationships, language, clothing styles, arts and crafts, food preparation, means of getting around, games, customs in warfare, where members of the group now live, and how they live.
3. ~~2~~. Do TWO of the following. Focus on a specific group or tribe.
4. ~~3~~. Do ONE of the following:
5. ~~4~~. Do ONE of the following:
 - a. Write or briefly describe how life ~~would~~ **might** have been different for the European settlers if there had been no native Americans to meet them when

they came to this continent.

- c. Learn in an Indian language at least 25 common terms and their *meaning* meanings.
- i. *Learn about the Iroquois Confederacy, including how and why it was formed. Tell about its governing system. Describe some of the similarities and differences between the governments of the United States and of the Six Nations (the Haudenosaunee or Iroquois Confederacy).*
- Attend a contemporary American Indian gathering. Discuss with your counselor what you learned and observed. Include in your discussion any singing, dancing, drumming, and the various men's and women's dance styles you saw.**
-



Journalism

Changes were made to requirements 2a, and 2a2. The changes to the requirements are as follows:

2. a. Newspaper, *and* magazine, and online journalism:
2. Visit the office of a newspaper, *or* magazine, or internet news site *office*. Ask for a tour of the various divisions (editorial business, and printing). During your tour, talk to an executive from the business side about management's relations with reporters, editors, and photographers and what makes a "good" newspaper, *or* magazine, or internet news site.
-



Landscape Architecture

Changes were made to requirements 2a, 2b, 3, 4, 4a, and 4b. The changes to the requirements are as follows:

2. a. Tell whether the design had separate spaces, a defined point of entry, a clear path system, and sun and shade variety. Tell whether the design had separate spaces, a defined point of entry, a clear path system, and sun and shade variety.
- b. Discuss how any structures, the designated seating, eating, or parking *area* areas suited the overall design.
3. Identify five shrubs, five trees, and one ground cover, being sure that you select examples of different shapes, sizes, and textures. With the help of your counselor or a local nursery, choose plants that will grow in your area. Bring pictures of the different planting materials or, if possible, examples of their branches, leaves, or flowers to a group such as your troop *meeting* or class at school. Be

prepared to tell how you might use each in the design of a landscape **and the maintenance that would follow.**

4. **After obtaining permission from the appropriate authority, look** *Look* at and study a place of worship, ~~or~~ school grounds, **or a public building and identify** *to find the place* where most people arrive by bus or car. *Show you can* **Then** do the following:
 - a. Using a measuring tape, measure and draw the **main site** entry and its nearby area *using a scale of 1/8 inch equal to 1 foot on an 11 by 17 inch piece of paper.* **Define the scale of your drawing.** Be sure to include the driveway and ~~the wall and door where people enter the school or place of worship~~ **sidewalk or path that leads to the building's main entry.** Indicate any sidewalks, structures, trees, and plants, **lights, drains, utilities, or other site furnishings** within the study area. Make ~~a copy~~ **two copies** of this plan ~~to~~ **and** save the original, then do 4b and 4c using the copies.
 - b. On one copy **of your site plan,** use directional arrows to indicate where the water drains across the site, where ditches occur, and where water stands for a longer period of time.



Leatherwork

Changes were made to requirements 4 and 5c, and their positions were swapped (Old requirement 4 is now 5c and old requirement 5c is now 4.) The changes to the requirements are as follows:

4. *Recondition or show that you can take proper care of your shoes, a baseball glove, a saddle, furniture or other articles of leather.*
Braid or plait an article out of leather, vinyl lace, or paracord.
5. c. *Braid or plait an article out of leather or vinyl lace.*
Recondition or show that you can take proper care of your shoes, a baseball glove, a saddle, furniture, or other articles of leather. Discuss with your counselor the advantages or disadvantages of leather vs. synthetic materials.



Lifesaving

Requirement 1b, although included in the requirements list in the *Lifesaving* merit badge pamphlet, was inadvertently omitted from the text in the *2016 Boy Scout Requirements* book. That requirement has been restored to the text in the *2017 Boy Scout Requirements* book, and the

wording has been changed as shown below.

1. b. Swim continuously for 400 yards using each of the following strokes in a strong manner, in good form with rhythmic breathing, for at least 50 continuous yards: front crawl, sidestroke, breaststroke, and elementary backstroke.



Music

Requirement 4d was deleted, and new requirement 5 was added. The changes to the requirements are as follows:

4. d. ~~Catalog your own or your family's collection of 12 or more compact discs, tapes, records, or other recorded music. Show how to handle and store them.~~
5. Define for your counselor intellectual property (IP). Explain how to properly obtain and share recorded music.



Nuclear Science

Changes were made to requirements 1b, 2a, and 2b, and a new requirement 1d was added. The changes to the requirements are as follows:

1. b. 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 (e.g., chest or dental X-ray), and background radiation including radon. Explain the ALARA principle and measures required by law to minimize these risks.
 - d. Compare the amount of radiation exposure of a nuclear power plant worker to that of someone receiving a chest and dental X-ray.
2. a. Tell the meaning of the following: atom, nucleus, proton, neutron, electron, quark, isotope; alpha particle, beta particle, gamma ray, X-ray; ionization, radioactivity, ~~and~~ radioisotope, and stability.
 - b. Choose an element from the periodic table. Construct 3-D models for the atoms of three isotopes of this element, showing neutrons, protons, and electrons. Use the three models to explain the difference between atomic number and mass number and the difference between the atom and nuclear and quark ~~structure~~ structures of ~~a neutron and a proton~~ isotopes.



Plumbing

A change was made to requirement 6. The change to the requirement is as follows:

6. Cut, thread, and connect two pieces of ~~steel~~ metal pipe.
-



Programming

Changes were made to requirements 1b, 2b, 4a, 5a, and 6. The changes to the requirements are as follows:

1. b. Discuss first aid and prevention for ~~the types of~~ potential injuries ~~or illnesses, such as eyestrain and repetitive stress injuries,~~ that could occur during programming activities, ~~including repetitive stress injuries and eyestrain.~~
 2. b. ~~Describe~~ Discuss with your counselor the history of programming and the evolution of programming ~~methods and how they have improved over time~~ languages.
 4. a. Explain ~~how software patents and copyrights~~ the four types of intellectual property used to protect ~~a programmer~~ computer programs.
 5. a. With your counselor's approval, choose a sample program. ~~Then, as a minimum, modify~~ Modify the code or add a function or ~~subprogram~~ subroutine to it. Debug and demonstrate the modified program to your counselor.
 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.
-



Pulp and Paper

Changes were made to requirements 3 and 3a. The changes to the requirements are as follows:

3. ~~List the~~ Name at least four types of trees that are the major sources of papermaking fibers. Then do the following:
 - a. Discuss what other uses are made of the trees and ~~of~~ the forestland owned by the pulp and paper industry.



Rifle Shooting

Changes were made to requirements 1c, and these portions of requirement 2: Option A-f, and Option C-d. New requirement g was added to Option A and new requirement c was added to Option B, causing renumbering of requirements g-l to h-m in Option A and c-k to d-l in Option B.

The changes to the requirements are as follows:

1. c. Explain the need for, and use and types of, eye and hearing protection.
Demonstrate their proper use.
2. Option A
 - f. Explain to your counselor the fundamental rules for safe gun handling. Explain each rule for using and storing a gun. Identify and explain each rule for safe shooting.
 - g. Explain the range commands and range procedures.
 - h. ~~g.~~ Demonstrate the knowledge, skills, and attitude necessary to safely shoot a rifle from the bench rest position or supported prone position while using the five fundamentals of rifle shooting.
 - i. ~~h.~~ Identify the basic safety rules for cleaning a rifle, and identify the materials needed
 - j. ~~i.~~ Demonstrate how to clean a rifle properly and safely.
 - k. ~~j.~~ Discuss what points you would consider in selecting a rifle
 - l. ~~k.~~ Using a .22 caliber rimfire rifle and shooting from a bench rest or supported prone position at 50 feet, fire five groups (three shots per group) that can be covered by a quarter. Using these targets, explain how to adjust sights to zero a rifle.
 - m. ~~l.~~ Adjust sights to center the group on the target* and fire five groups (five shots per group). According to the target used, each shot in the group must meet the following minimum score:
 1. A-32 targets - 9
 2. A-17 or TQ-1 targets - 7,
 3. A-36 targets - 5.
- Option B
 - c. Explain the range commands and range procedures.
 - d. ~~e.~~ Identify the two most common types of air rifle ammunition.
 - e. ~~d.~~ Identify and demonstrate the five fundamentals of shooting a rifle safely.
 - f. ~~e.~~ Identify and explain each rule for shooting an air rifle safely.
 - g. ~~f.~~ Demonstrate the knowledge, skills and attitude necessary to safely shoot a target from the bench rest position or supported prone position while using the five fundamentals of rifle shooting.
 - h. ~~g.~~ Identify the basic safety rules for cleaning an air rifle, and identify the materials needed.

- i. ~~h.~~ Demonstrate how to clean an air rifle safely.
- j. ~~i.~~ Discuss what points you would consider in selecting an air rifle.
- k. ~~j.~~ Using a BB gun or pellet air rifle and shooting from a bench rest or supported prone position at 15 feet for BB guns or 33 feet for air rifles, fire five groups (three shots per group) that can be covered by a quarter.
- l. ~~k.~~ Adjust sights to center the group on the target and fire five groups (five shots per group). According to the target used, each shot in the group must meet the following minimum score:
 - 1. BB rifle at 15 feet or 5 meters using TQ - 5 targets - 8.
 - 2. Pellet air rifle at 25 feet using TQ - 5 target - 8, at 33 feet or 10 meters using AR-1 targets - 6.

Option C

- d. Identify the various grades of black powder and **black powder substitutes and explain** their proper use.



Safety

Changes were made to requirement 2a. The changes to the requirement are as follows:

- 2. a. Using a safety checklist approved by your counselor, make an inspection of your home. *Explain the* **Identify any** hazards found and **explain** how *they* **these** can be corrected.



Salesmanship

Changes were made to requirement 1 (old requirement 1 is now 1a, and a new requirement 1b was added), and to requirements 6b4, and 7b. .

The changes to the requirements are as follows:

- 1. ~~Explain the responsibilities of a salesman, and how a salesperson serves customers and helps stimulate the economy.~~

Do the following:

- a. **Explain the responsibilities of a salesperson, and how a salesperson serves customers and helps stimulate the economy.**
- b. **Explain the differences between a business-to-business salesperson and a consumer salesperson.**
- 6. b. 4. Include **at least two of** your own questions.
- 7. b. Discuss with your counselor what education, experience, or training you should obtain so you are prepared to serve in *that* **a sales** position.



Scholarship

Changes were made to requirement 1a. The changes to the requirements are as follows:

1. a. Show that ~~you have had~~ **your school grades have been** an average ~~grade~~ of B or higher (80 percent or higher) for one term or semester.



Small Boat Sailing

The following changes were made to requirements 1a, 1b, 1c, and 2. Requirement 1a was moved to 1b and revised, old requirement 1b was removed, and new requirements 1a and 1c were added. Requirement 2 was revised and the details of the BSA swimmer test were added to the text.

Note that there is an editorial error in the 2017 Boy Scout Requirements book, in requirement 1b. ("... while canoeing:" should read "... while sailing:") The correct wording appears in the Small-Boat Sailing merit badge pamphlet.

The changes to the requirements are as follows:

1. a. ~~Explain first aid for injuries or illnesses that could occur while small-boat sailing, including hypothermia, dehydration, heat reactions, motion sickness, cuts, scratches, abrasions, contusions, puncture wounds, and blisters.~~
Explain to your counselor the most likely hazards you may encounter while participating in small-boat activities, and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
- b. ~~Identify the conditions that must exist before performing CPR on a person, and explain how to recognize such conditions. Demonstrate proper technique for performing CPR using a training device approved by your counselor.~~
Review prevention, symptoms, and first-aid treatment for the following injuries or illnesses that can occur while sailing: blisters, cold-water shock and hypothermia, dehydration, heat-related illnesses, sunburn, sprains, and strains.
- c. **Discuss the BSA Safety Afloat policy. Tell how it applies to small-boat activities.**
2. Before doing ~~the following~~ requirements **3 through 9**, successfully complete the BSA swimmer test.
Jump feetfirst into water over the head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or

crawl; then swim 25 yards using an easy resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.



Sports

Changes were made to requirements 1, 4, and 5. Old requirement 1 was revised and became requirement 1b, and a new requirement 1a was added. Requirements 4 and 5 were revised and renumbered as 5 and 4. The changes to the requirements are as follows:

1. *Show that you know first aid for and how to prevent injuries or illnesses that could occur while playing sports, including sprains, strains, contusions, abrasions, fractures, blisters, muscle cramps, dehydration, heat and cold reactions, injured teeth, nausea, and suspected injuries to the head, neck, and back.*

Do the following:

- a. **Explain to your counselor the most likely hazards you may encounter while playing sports, and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.**
- b. **Show that you know first aid for injuries or illnesses that could occur while participating in sports, including sprains, strains, contusions, abrasions, fractures, blisters, muscle cramps, injured teeth, dehydration, heat and cold reactions, and concussions or other suspected injuries to the head, neck, and back.**
4. *Take part for one season (or four months) as a competitive individual or as a member of an organized team in TWO of the following sports: baseball, basketball, bowling, cross-country, field hockey, football, ice hockey, lacrosse, soccer, softball, table tennis, tennis, volleyball, water polo. Your counselor may approve in advance other recognized sports, but not any sport that is restricted and not authorized by the Boy Scouts of America. Then with your chosen sports do the following:*
 - a. *Give the rules and etiquette for the two sports you picked.*
 - b. *List the equipment needed for the two sports you chose. Describe the protective equipment and appropriate clothing (if any) and explain why it is needed.*
 - c. *Draw diagrams of the playing areas for your two sports.*

With guidance from your counselor, establish a personal training program suited to the activities you choose for requirement 5.

Then do the following:

- a. **Create a chart and use it to track your training, practice, and development in these sports for one season (or four months).**

- b. Demonstrate proper technique for your two chosen sports
 - c. At the end of the season, share your completed chart with your counselor and discuss how your participation in the sports you chose has affected you mentally and physically.
5. *With guidance from your counselor, establish a personal training program suited to the activities you chose for requirement 4. Then do the following:*
 - a. *Organize a chart to track your training, practice, and development in these sports for one season (or four months).*
 - b. *Demonstrate proper technique for your two chosen sports.*
 - c. *At the end of the season, share your completed chart with your counselor and discuss how your participation in the sports you chose has affected you mentally and physically.*

Take part for one season (or four months) as a competitive individual or as a member of an organized team in TWO of the following sports: baseball, basketball, bowling, cross-country, field hockey, football, golf, gymnastics, ice hockey, lacrosse, soccer, softball, swimming, table tennis, tennis, track and field, volleyball, water polo, wrestling. Your counselor may approve in advance other recognized sports, but not any sport that is restricted and not authorized by the Boy Scouts of America. Then with your chosen sports do the following:

 - a. Give the rules and etiquette for the two sports you picked.
 - b. List the equipment needed for the two sports you chose. Describe the protective equipment and appropriate clothing (if any) and explain why it is needed.
 - c. Draw diagrams of the playing areas for your two sports.



Traffic Safety

A new merit badge pamphlet with revised requirements was issued after the release of *Boy Scout Requirements 2016*. There was a minor change to requirement 4b and revisions to requirements 5b and 5d. The text in *Boy Scout Requirements 2017* includes the changes to requirement 4b, but inadvertently does not include the changes to 5b and 5d. The changes are as follows:

4.
 - b. *Demonstrate* **Describe** the difference in nighttime visibility between a properly lit bicycle and rider (or a pedestrian) wearing reflective material and a bicycle and rider with no lights (or a pedestrian) dressed in dark clothing, without reflective material.
5.
 - b. Using the Internet (with your parent's permission), visit five *Web-sites* **websites** that cover safe driving for teenagers. *As* **Then in** a group, *discuss* **what you learn session** with *your counselor and* at least three *other* teenagers

and your counselor, discuss what you have learned.

- d. Accompanied by an adult and a buddy, pick a safe place to observe traffic at a controlled intersection (traffic signal or stop sign) on three separate days and at three different times of the day, for 30 minutes on each visit. At this intersection, survey *(1) such* violations *as* **that might occur. These violations could include (but are not limited to)** running a red light or stop sign *;* *or (2) seat belt usage* , **speeding, using a cell phone while driving, or occupants not wearing their seat belts**. Count the number of violations *or number of drivers not wearing a seat belt*. Record in general terms *if the driver was young or old, male or female* **the approximate age of the people you observed**. Keep track of the total number of vehicles observed so that you can determine the percentage of compliance vs. violations. Discuss the findings with your merit badge counselor.



Wood Carving

Changes were made to requirements 1b, 4b, and 4d. The changes to the requirements are as follows:

1. b. Show that you know first aid for injuries *or illnesses* that could occur while wood carving, including minor cuts and scratches and splinters.
4. b. *Basic* **Push** cut and *push* **levering** cut
- d. *Score line or stop cut* **Stop cut or score line**



Astronomy

Changes were made to requirements 4b, 6b, and 8b, and a footnote to requirement 4 was added. The changes to the requirements are as follows:

4. Do the following:^{*}
 - b. Identify **in the sky** at least eight conspicuous stars, five of which are of magnitude 1 or brighter.
6. b. Sketch the phase and the daily position of the Moon at the same hour and place, for four *days in a row* **nights within a one week period**. Include landmarks on the horizon such as hills, trees, and buildings. Explain the changes you observe.
8. b. Plan and participate in a three-hour observation session that includes using binoculars or a telescope. List the celestial objects you want to observe, and find each on a star chart or in a guidebook. Prepare an observing log or notebook. *Show your plan, charts, and log or notebook to your counselor*

before-making-your-observations. Discuss with your counselor what you hope to observe prior to your observation session. Review your log or notebook with your counselor afterward.

*For requirement 4, if instruction is done in a planetarium, Scouts must still identify the required stars and constellations under the natural night sky.



Inventing

Changes were made to requirement 4. The changes to the requirement are as follows:

4. Discuss with your counselor the types of inventions that are appropriate to share with others without protecting and explain why. Tell your counselor about one *nonpatented or noncopyrighted* unpatented invention and its impact on society.



Soil and Water Conservation

A new requirement 4e has been added. The text is as follows:

4. e. Explain what an aquifer is and why it can be important to communities.

In addition, A number of changes to the text of the requirements for this merit badge were first published in the Soil and Water Conservation merit badge pamphlet (#33291A) issued in 2004. The revised requirements were also included in the version of the pamphlet issued in 2008 (#35952) and in the 2010 revision of the 2004 edition (#35952 - SKU 610016) and each printing of each of those editions. However, the revised text was not included the 2005 edition of Boy Scout Requirements, nor in any of the subsequent editions of that booklet, up to and including the 2017 edition which have all included the older wording of the requirements.

What is shown below are the differences between the text as it has appeared in Boy Scout Requirements, and the text which has been used in the merit badge pamphlets.

2. b. Tell why *it* soil conservation is important. Tell how it affects you.
- d. Take pictures of or draw two kinds of soil erosion.
3. c. Take pictures of or draw three kinds of erosion-control practices.
4. c. *Then outline on your map,* Outline, as far as *possible* the map will allow, the next larger watershed *which* that also has the *smallest* smaller one in it.
- d. Explain what a river basin is. Tell why all people living in a river basin should

- be concerned about land and water use in ~~it~~ **the basin**.
5. b. ~~Show by demonstration~~ **Demonstrate** at least two of the following actions of water in relation to the soil: percolation, capillary action, precipitation, evaporation, transpiration.
 - d. Tell how uses of forest, range, and ~~farm-land~~ **farmland** affect usable water supply.
 7. c. Seed an area of at least ~~1/5~~ **one-fifth** acre for some worthwhile conservation ~~purpose~~ **purposes**, using suitable grasses or legumes alone or in a mixture.
 - d. Study a soil survey report. Describe the things in it. ~~On~~ **Using** tracing paper **and pen, trace** over any of the soil maps; **and** outline an area with three or more different kinds of soil. List each kind of soil by full name and map symbol.

Primary Source: *2017 Boy Scout Requirements* (33216 - SKU 637685)

Additional sources include: **Bryan on Scouting - Revised campout requirements for Second Class, First Class take effect Aug. 1, 2017,**
Bryan on Scouting - The way Scouts earn Eagle Palms is about to change
Advancement News, Vol. 7, No 5. (Sept.-Oct. 2017)
Astronomy merit badge pamphlet excerpt (35859 - ©2016), and
Inventing merit badge pamphlet excerpt (35833 - ©2016)

This analysis was prepared as a service to Scouts and Scouters nationwide
Paul S. Wolf
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