

# Merit Badge Requirement Updates 2023

## Effective January 1, 2023

### Merit badge requirement updates from 2023 Scouts BSA Requirements

The *2023 Scouts BSA Requirements Handbook* (BSA Publication No. 33216) should soon be available for purchase on [ScoutShop.org](https://scoutshop.org) and in Scout Shops.

These changes are effective Jan 1, 2023 and now reflected in Scoutbook and on [scouting.org](https://scouting.org).

### American Business – 2C

2c. Explain how a sole proprietorship, partnership, or limited liability company gets its capital. Discuss and explain four ways a corporation obtains capital.

### Animal Science - 1, Avian Option a, c, e

1. Name four breeds of livestock in each of the following classifications: horses, dairy cattle, beef cattle, sheep, hogs, poultry, and goats. Tell their principal uses and merits. Tell where the breeds originated.

#### Avian Option

- a. Make a sketch of a layer house or broiler house showing nests, roosts, feeders, waterers, and means of ventilation. Explain how insulation, ventilation, temperature controls, automatic lights, and other environmental controls are used to protect birds from heat, cold, and bad weather. Explain the importance of light for egg production.
- b. Explain why overcrowding is dangerous for poultry flocks.
- c. Tell about the grading of eggs. Describe the classes of chicken meat.
- d. Do ONE of the following: (1) Manage an egg-producing flock for five months. Keep records of feed purchased, eggs sold, medication, vaccination, and mortality. Present your records to your counselor for review. (2) Raise five chickens from hatching. Keep records of feed intake, weight gains, medication, vaccination, and mortality. Present your records to your counselor for review. (3) Visit a commercial avian production facility. Describe what you saw and explain what you learned. If you cannot visit a commercial facility, view a video from a poultry association, or research the internet (with your parent's permission) for information on poultry production. Tell about your findings.
- e. Define the following terms: chick, pullet, hen, cockerel, cock, capon.

## **Archery - 1 a, b, c, d, 3b, 4a, b, c, d, 5ac, 5af1 cd, 5bc, 5bf1 cd**

1. Do the following:

- a. Explain the five range safety rules.
- b. Explain the four whistle commands used on the range.
- c. Explain how to safely remove arrows from the target and return them to your quiver.
- d. Tell about your local and state laws for owning and using archery equipment.

3b. Explain the following terms: draw length, draw weight, mechanical release and barebow

4. Explain the following:

- a. The difference between an end and a round
- b. The differences among field, target, and 3-D archery
- c. How the five-color World Archery Federation target is scored
- d. How the National Field Archery Association (NFAA) black-and-white field targets and blue indoor targets are scored

5. Do ONE of the following options.

Option A—Using a Recurve Bow or Longbow

- c. Demonstrate and explain USA Archery’s “Steps of Shooting” for the bow you are shooting.
- f. Do ONE of the following:
  1. Using a recurve or longbow and arrows with a finger release, shoot a single round of one of the following BSA, USA Archery, or NFAA rounds:
    - c. World Archery/USA Archery indoor\* round and make a score of 80 points
    - d. An NFAA indoor\* round and make a score of 50 points \*The indoor rounds can be shot outdoors if this is more convenient.

Option B—Using a Compound Bow

- c. Demonstrate and explain USA Archery’s “Steps of Shooting” for the bow you are shooting.
- F. Do ONE of the following:
  - 1 Using a compound bow and arrows with a finger release, shoot a single round of one of the following BSA, USA Archery, or NFAA rounds:
    - c. A World Archery/USA Archery indoor round and make a score of 90 points
    - d. An NFAA indoor round and make a score of 60 points

## Architecture - 1b

1b. Select a historical architectural achievement that has had a major impact on society. Using resources such as the internet (with your parent's permission), books, and magazines, find out how this achievement has influenced the world today. Tell your counselor what you learned

## Composite Materials - 1c 3a

1c. Describe what a safety data sheet (SDS) is and tell why it is used.

3a. Discuss three different composite reinforcement materials, their positive and negative characteristics, and their uses. Obtain the SDS for each one and discuss the toxicity, disposal, and safe-handling sections for these materials.

## Cooking - 2c, d, 4a, 5b, d, e, g, 6a, f

1. Health and safety. Do the following: a. Explain to your counselor the most likely hazards you may encounter while participating in cooking activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards. b. Show that you know first aid for and how to prevent injuries or illnesses that could occur while preparing meals and eating, including burns and scalds, cuts, choking, and allergic reactions. c. Describe how meat, fish, chicken, eggs, dairy products, and fresh vegetables should be stored, transported, and properly prepared for cooking. Explain how to prevent cross-contamination. d. Discuss with your counselor food allergies, food intolerance, and food-related illnesses and diseases. Explain why someone who handles or prepares food needs to be aware of these concerns. e. Discuss with your counselor why reading food labels is important. Explain how to identify common allergens such as peanuts, tree nuts, milk, eggs, wheat, soy, and shellfish.

2. Nutrition. Do the following:

c. Track your daily level of activity and your daily caloric need based on your activity for five days. Then, based on the My Plate food guide, discuss with your counselor an appropriate meal plan for yourself for one day.

d. Discuss with your counselor food allergies, food intolerance, and food-related illnesses and diseases. Explain why everyone who handles or prepares food needs to be aware of these concerns. e. Discuss the following food label terms: calorie, fat, saturated fat, trans fat, cholesterol, sodium, carbohydrate, dietary fiber, sugar, protein. Explain how to calculate total carbohydrates and nutritional values for two servings, based on the serving size specified on the label.

4. Cooking at home. Using the MyPlate food guide or the current USDA nutrition model, plan menus for three full days of meals (three breakfasts, three lunches, and three dinners) plus one dessert. Your 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 keep your foods safe and free from cross-contamination. List the equipment and utensils needed to prepare and serve these meals. Then do the following:

a. Find recipes for each meal. Create a shopping list for your meals showing the amount of food needed to prepare for the number of people you will serve. Determine the cost for each meal.

## Cooking - continue

5. Camp cooking. Do the following:

b. Find or create recipes for at least three meals, a dessert and a snack. Adjust menu items in the recipes for the number to be served. Create a shopping list and budget to determine the per-person cost.

c. Share and discuss your meal plan and shopping list with your counselor.

d. In the outdoors, using your menu plans and recipes for this requirement, cook three of the five meals you planned using either a camp stove OR backpack stove. Use a skillet over campfire coals OR a Dutch oven for a fourth meal, and cook the fifth meal in a foil pack OR on a skewer. Serve all of these meals to your patrol or a group of youth.

e. In the outdoors, prepare a dessert OR snack and serve it to your patrol or a group of youth.

g. Lead the clean-up of equipment, utensils, and the cooking site thoroughly after each meal. Properly store or dispose unused ingredients, leftover food, dishwater and garbage.

6. Trail and backpacking meals. Do the following:

a. Using the MyPlate food guide or the current USDA nutrition model, plan a meal for trail hiking or backpacking that includes one breakfast, one lunch, one dinner, and one snack. These meals must consider weight, not require refrigeration and are to be consumed by three to five people (including you). List the equipment and utensils needed to prepare and serve these meals.

f. Explain to your counselor how you should divide the food and cooking supplies among the patrol in order to share the load. Discuss how to properly clean the cooking area and store your food to protect it from animals.

## Cycling - 1a, 2, 3, 4, 5, 6 Option A a1, 2, 3, 4, 5, 6, Option B a1, 3, b1, 2, 3, c, d, e

1. Do the following:

a. Explain to your counselor the most likely hazards you may encounter while participating in cycling activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards. Explain to your counselor how to ride predictably, be conspicuous, think ahead, and ride ready.

2. Describe your state and local laws concerning bicycles. Discuss what is the same and what is different from laws applying to motor vehicles. Explain where and how you should ride on roads and streets to include lane position, changing lanes, making left and right turns, and riding through intersections.

3. Explain the importance of wearing a properly sized and fitted helmet while cycling and of wearing the right clothing for the weather. Know the BSA Bike Safety Guidelines.

4. Using a bicycle safety checklist, clean and adjust a bicycle and present it to your counselor for inspection. Do the following:

a. Show points that should be checked regularly to make sure the bicycle is safe to ride. (b) Show how to adjust the saddle and handlebars for a proper fit.

## Cycling - continue

- c. Show how to adjust brakes and gear shifting (derailleurs).
  - d. Show all points that need regular lubrication.
  - e. Show how to repair a flat by removing the tire, replacing or patching the tube, and remounting the tire.
  - f. Show that the bicycle meets local laws.
5. Demonstrate basic bicycle handling skills to your counselor, to include how to properly mount your bicycle, starting and stopping (to include emergency stops), riding in a straight line, turning, shifting gears, scanning, and signaling.
6. Using the BSA buddy system, complete all of the requirements for ONE of the following options: road biking OR mountain biking.\*

### Option A: Road Biking

- a. Take a road test with your counselor and demonstrate the following:
  - 1. On an urban street with light traffic, properly execute a left turn from the center of the street; also demonstrate an alternate left-turn technique used during periods of heavy traffic.
  - 2. Properly execute a right turn.
  - 3. Demonstrate appropriate actions at a right-turn-only lane when you are continuing straight.
  - 4. Show proper curbside and road-edge riding. Show how to ride safely along a row of parked cars.
  - 5. Cross railroad tracks properly.
- b. Avoiding main highways, take two rides of 10 miles each, two rides of 15 miles each, and two rides of 25 miles each. You must make a report of the rides taken. List dates for the routes traveled, and interesting things seen on the ride.
- c. After completing requirement b for the road biking option, do ONE of the following:
  - 1. Lay out on a road map a 50-mile trip. Stay away from main highways. Using your map, make this ride in eight hours or less.
  - 2. Participate in an organized bike tour of at least 50 miles. Make this ride in eight hours or less. Afterward, use the tour's cue sheet to make a map of the ride.

### Option B: Mountain Biking

- a. Demonstrate the following mountain bike handling skills to your counselor:
  - 1. Neutral position, ready position, bike body separation (side to side, and forward and back), and body positioning for cornering.

## Cycling - continue

3 Show proper technique for riding up (seated, crouched, and standing) and down hills.

b. Take a trail ride with your counselor and demonstrate the following:

1. Show proper trail etiquette to hikers and other cyclists, including when to yield the right-of-way.

2. Demonstrate how to correctly cross an obstacle by either going over the obstacle on your bike or dismounting your bike and crossing over or around the obstacle.

3. Cross rocks, gravel, and roots properly

c. Describe the rules of trail riding, including how to know when a trail is unsuitable for riding.

d. On trails approved by your counselor, take two rides of 2 miles each, two rides of 5 miles each, and two rides of 8 miles each. You must make a report of the rides taken. List dates for the routes traveled, and interesting things seen.

e. After fulfilling the previous requirement, lay out on a trail map a 22-mile trip. You may include multiple trail systems, if needed. Stay away from main highways. Using your map, make this ride in six hours.

## Digital Technology - 3a, 3e, 4a, 5a, 7c

3. Do the following:

a. Explain to your counselor how text, sound, and pictures are digitized for storage.

e. Explain what a computer network is and the difference between a local area network (LAN) versus a wide area network (WAN).

4. Do the following:

a. Explain what a program or software application or “app” is and how a computer uses a CPU and memory to execute it.

5. Do the following:

a. Describe at least two different ways data can be transferred through the internet.

7. Do the following:

c. Discuss with your counselor an article or (with your parent or guardian’s permission) a report on the internet about a recent legal case involving an intellectual property dispute.

## Disabilities Awareness – 6

6. Make a commitment to your merit badge counselor describing what you will do to show a positive attitude about and toward people with disabilities and to encourage positive attitudes among others. Discuss how your awareness has changed as a result of what you have learned.

## Emergency Preparedness – 3

3. Show how you could save a person from the following dangerous situations without putting yourself in danger:
  - a. Touching a live household electric wire
  - b. A structure filled with carbon monoxide
  - c. Clothes on fire
  - d. Drowning, using non-swimming rescues (including accidents on ice)

## Environmental Science - 3, 3f2, 5

3. Do ONE activity from SEVEN of the following EIGHT categories (using the activities in this pamphlet as the basis for planning and carrying out your projects)
  - 3 F. Pollution Prevention, Resource Recovery, and Conservation
    - f2. Determine 10 ways to conserve resources or use resources more efficiently in your home, at school, or at camp. Practice at least two of these methods for five days and discuss with your counselor what you have learned.
  5. Identify the items that would need to be included in an environmental impact statement for a construction project such as building a house, adding a new building to your Scout camp, or one you create on your own that is approved by your counselor.

## Family Life - 6b1, 2, 3

6. Do the following:
  - 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.

## Farm Mechanics - 1d

1. Do the following:

d. Describe what a safety data sheet (SDS) is and tell why it is used. Obtain the SDS for any engine coolant, oil, grease, fuel, hydraulic or transmission fluid, or other flammable or hazardous materials you use in meeting the requirements for this merit badge

## Game Design - 1b, 5b, 8a, b

1. Do the following:

b. Describe five different reasons that people play games. For each, give an example of a game that fits that reason.

5. Design a new game. Any game medium or combination of mediums is acceptable. Record your work in a game design notebook.

b. Describe the reason that someone would want to play your game

8. Do ONE of the following:

a. With your parent or guardian's permission and your counselor's approval, visit with a professional in the game development industry and ask them about their job and how it fits into the overall development process.

b. Alternatively, meet with a professional in game development education and discuss the skills they emphasize in the classroom

## Genealogy - 1a, b, c, 4a, b, c, d, e, 8b, c

1. Do EACH of the following:

a. Explain to your counselor what the words genealogy, ancestor and descendant mean.

b. Explain what a family tree is and what information would be kept there.

c. Explain what a family group record is and what information would be kept there.

4. Do EACH of the following:

a. Name three types of physical genealogical resources, where you can find them, and explain how these resources can help you chart your family tree.

b. Name three types of digital genealogical resources, where you can find them, and how these resources can help you chart your family tree.

c. Obtain at least one genealogical document that supports an event that is or can be recorded on your pedigree chart or family group record

d. Tell how you found it and how you would evaluate the genealogical information you found for requirement 4c.



## Genealogy - continue

e. Tell a likely place to find these type of genealogical records: marriage record, census record, birth record, and burial information.

8. Do the following:

b. Explain how photography has influenced genealogy.

c. Explain how record indexing works and how that has influenced genealogy.

## Geology - 5d2

5. Do ONE of the following (a OR b OR c OR d):

d. Earth History Option

2. Explain the theory of plate tectonics. Make a chart explaining, or discuss with your counselor, how the processes of plate tectonics work. Discuss how plate tectonics determines the distribution of most of the Earth's volcanoes, earthquakes, and mountain belts.

## Golf - 3, 7g

3. Tell about your understanding of the World Handicap System.

7. Show the following:

g. A recovery shot from a bunker or heavy rough

## Hiking - 2a, b, c, 4, 5

2. Do the following:

a. Explain and, where possible, show the points of good hiking practices including proper outdoor ethics, hiking safety in the daytime and at night, courtesy to others, choice of footwear, and proper care of feet and footwear.

b. Read aloud or recite the Leave No Trace guidelines, and discuss why each is important while hiking.

c. Read aloud or recite the Outdoor Code, and give examples of how to follow it on a hike.

4. Take four 10-mile hikes and one 20-mile hike, each on a different day, and each of continuous miles. Prepare a written hike plan before each hike and share it with your merit badge counselor or a designee for approval before starting the hike. Include map routes, a clothing and equipment list, and a list of items for a trail lunch. 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 such as overnight.\*

5. After each of the hikes (or during each hike if on one continuous "trek") in requirement 4, write a short report on your hike. For each hike, give the date and description (or map) of the route covered, the weather, any interesting things you saw, and any challenges you had and how you overcame them.

It may include something you learned about yourself, about the outdoors, or about others you were hiking with. Share this with your merit badge counselor.\*

\*The required hikes for this badge may be used in fulfilling hiking requirements for rank advancement. However, these hikes cannot be used to fulfill requirements of other merit badges.

## Inventing – 6b

6. Think of an item you would like to invent that would solve a problem for your family, troop, chartered organization, community, or a special-interest group. Then do EACH of the following, while keeping a notebook to record your progress.

b. Create a model of the invention using clay, cardboard, or any other readily available material. List the materials necessary to build a working prototype of the invention.

## Mammal Study - 3a, b, c

3. Do ONE of the following:

(a) Spend three hours in two different kinds of natural habitats or at different elevations for a total of 6 hours. List the different mammal species and how many of each you identified by sight or sign. Tell why all mammals do not live in the same kind of habitat.

(b) Spend three hours on five different days in at least a 25-acre area (about the size of 31 /2 football fields) for a total of 15 hours. List the mammal species you identified by sight or sign.

(c) From study and reading, write a simple life history of one nongame mammal that lives in your area. Tell how this mammal lived before its habitat was affected in any way by humans. Tell how it reproduces, what it eats, and its natural habitat. Describe its dependency upon plants and other animals (including humans), and how they depend upon it. Describe how humans have benefited from the mammal you have chosen and whether the mammal has benefited from association with humankind.

## Nature - 4g2, 4h1, 6a, b

4. Do all of the requirements in FIVE of the following fields:

### 4g- Plants

2. Do ONE of the following options:

a. Collect and label the seeds of six plants OR the leaves of 12 plants.

b. Photograph the seeds of six plants OR the leaves of 12 plants and create a catalog of your photos.

### 4h - Soils and Rocks

1. Collect and identify three different types of soil that represent soils high in sand, clay and humus.

6. Do the following:

a. Explain what succession is to your counselor.

## Nature - continue

b. Visit a natural area (forest, grassland, meadow, water feature) and explain what stage of succession (both plant and animal) the area is in. Talk about what community/ succession stages may have been there before and what community/succession stages may replace what you see now. Discuss what disturbances or changes have taken place in the past to create this landscape and what changes may occur in the future to change the landscape further.

## Personal Fitness - 4d

4. Explain the following about physical fitness

d. How a program like the President's Council on Sports, Fitness & Nutrition can lead to lifelong healthful habits.

## Plant Science – 8 Option 3 Field Botany A2, B, F1d, F3c1, 2, 3

8. Choose ONE of the following options and complete each requirement:

Option 3: Field Botany

A. Visit a park, forest, Scout camp, or other natural area near your home. While you are there:

2) Using information from maps, textbooks, or the internet, describe the environmental factors that may influence the presence of plants on your site, including latitude, climate, air and soil temperature, soil type and pH, geology, hydrology, and topography. 3) Record any differences in the types of plants you see at the edge of a forest, near water, in burned areas, or near a road or railroad.

B. Select a study site that is at least 100 by 100 feet. Make a list of 10 woody plants (trees and shrubs) and 10 nonwoody plants in the study site. Find out which of these are native plants and which are exotic (or nonnative).

F. Choose ONE of the following alternatives and complete EACH of its requirements:

1. Tree Inventory

d. Show two or more people how to use a leaf or twig key to identify at least five species of trees or shrubs.

3. Nested Plot

c. At each site, record observations about the soil and other influencing factors AND do the following. Then make a graph or chart to show the results of your studies.

1. Identify, measure, and map each tree in a 100-by-100-foot plot. (Measure the diameter of each tree larger than 3 inches in diameter at 4 feet above the ground.)

2. Identify and count all trees and shrubs in a 10-by-10-foot plot within each of the larger areas.

3. Identify and count all broad-leaved plants (trees, shrubs, vines, and herbaceous plants) all plants (wildflowers, ferns, grasses, mosses, etc.) of a 4-by-4-foot plot within the 10-by-10-foot plot.

## Programming - 1b, 3a

1. Safety. Do the following:

b. Discuss first aid and prevention for the types of injuries that could occur during programming activities, including repetitive stress injuries and eyestrain.

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.

## Reptile and Amphibian Study - 3d, 5

3. Describe the main differences between:

d. Snakes and lizards

5. Compare how reptiles reproduce to how amphibians reproduce.

## Salesmanship - 2b, 2d, 3, 4, 6a3

2. Explain why it is important for a salesperson to do the following:

b. Learn all about the product to be sold

d. Follow up with customers after their purchase to confirm their satisfaction and discuss their concerns about the product.

3. Write and present a sales plan for a product and a sales territory assigned by your counselor.

4. Make a sales presentation of a product assigned by your counselor.

6. Do ONE of the following:

a. Interview a salesperson and learn the following:

3. How is the product sold?

## Small-Boat Sailing - 6i, j

6. Following the BSA Safety Afloat plan, show that you and a buddy can sail a boat properly. Do the following:

i. Accept a single line or side tow and maneuver the craft being towed safely for 20 boat lengths.

j. Upon returning to the dock, mooring, or beach, properly secure all equipment, furl or stow sails, and prepare the craft for unattended docking or beaching overnight or longer.

## Snow Sports - 2b, 7 Downhill a, h, i; Cross country a, b, d, i; Snowboarding i, k; Snowshoeing e, i, j

2. Do the following:

b. Explain the procedure used to report an accident to the local ski patrol or local emergency personnel.

7. Complete ALL of the requirements for ONE of the following options: downhill (Alpine) skiing OR cross-country (Nordic) OR snowboarding OR snowshoeing.

### **Downhill (Alpine) Skiing Option**

a. Show how to wax and maintain your skis and use/ maintain your release bindings. Explain the international DIN standard and what it means to skiers.

h. Make a controlled run down an intermediate slope.

i. Demonstrate the ability to ski in varied conditions, including changes in pitch, and snow conditions.

### **Cross-Country (Nordic) Skiing Option**

a. Show your ability to select, use, and maintain equipment for cross-country skiing in safety and comfort.

b. Discuss classic, skating, touring, and telemark skis

d Discuss the differences between cross-country, backcountry/ski touring, ski mountaineering, and downhill/ telemark skiing.

i. demonstrate your ability, on a 4-mile tour, to cope with an average variety of snow conditions

### **Snowboarding Option**

i. Make a controlled run down an intermediate slope.

k. Name the major snowboarding organizations in the United States and explain their functions.

### **Snowshoeing Option**

e. List the items you would take on a one-day snowshoe hike.

i. Demonstrate your ability, on a 2-mile snowshoe hike, to cope with an average variety to snow conditions.

j. Demonstrate the proper use of a topographic map and compass.

## Sports – 5

5. 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, diving, field hockey, flag football, flag team, golf, gymnastics, ice hockey, lacrosse, soccer, softball, spirit/cheerleading, swimming, tackle football, table tennis, tennis, track & field, volleyball, water polo and wrestling, and/or badminton. Your counselor may approve in advance other recognized sports.\* 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.

## Swimming – 5a

5. Do the following:

- a. Float faceup in a resting position for at least three minutes with minimal movement.