



2024 Edition

SCOUTMASTER BUCKY

Exploration Merit Badge

SCOUTS PARTICIPATING IN A SCOUTMASTER BUCKY MERIT BADGE OPPORTUNITY (ONLINE OR IN PERSON), PLEASE CONSIDER ALSO USING THE EXPLORATION MERIT BADGE CLASS PREPARATION PAGE FOR CLARIFICATIONS, INSIGHTS, AND EXPECTATIONS.

<https://scoutmasterbucky.com/merit-badges/exploration/exploration-cpp.pdf>

EXPLORATION MERIT BADGE WORKBOOK

REQUIREMENT 1a: Define exploration.

Notes:

REQUIREMENT 1a: Explain how it differs from adventure travel, trekking or hiking, tour-group trips, or recreational outdoor adventure trips.

Notes:



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REQUIREMENT 1b: 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.

Notes:

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Notes:



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REQUIREMENT 2: Discuss with your counselor the history of exploration.

Notes:

REQUIREMENT 2: 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.).

Notes:



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REQUIREMENT 3: Explain to your counselor why it is important to explore.

Notes:

REQUIREMENT 3a: Discuss why it is important for exploration to have a scientific basis.

Notes:



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REQUIREMENT 3b: Discuss how explorers have aided in our understanding of our world.

Notes:

REQUIREMENT 3c: Discuss what you think it takes to be an explorer.

Notes:



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DO ONE OF THE FOLLOWING (4A, 4B, or 4C) FOR REQUIREMENT 4

REQUIREMENT 4a: 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.

Name of Living Explorer selected:

Notes:



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REQUIREMENT 4b: 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.

Scientific Exploration Expedition selected:

Mission Objectives:



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Most Interesting / Most Important Discoveries of the Mission:

How information gained helped answer important questions:



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REQUIREMENT 4c:

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.

Notes:



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DO ONE OF THE FOLLOWING (5A or 5B) FOR REQUIREMENT 5

REQUIREMENT 5a: 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.

Selected Organization:

Parent's Name

Phone

Parent's Signature

Date

☐

permission

COUNSELOR APPROVAL: PERHAPS IMPLIED, THIS REQUIREMENT DOES NOT STATE THAT YOU NEED THE COUNSELOR'S APPROVAL AHEAD OF TIME TO VISIT AND "EXPLORE." PLEASE NOTE, AS WITH ANY REQUIREMENT, ACCEPTANCE IS AT THE DISCRETION AND SATISFACTION OF THE MERIT BADGE COUNSELOR.

Counselor's Name

Phone

Counselor's Signature

Date

☐

permission

Notes:



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REQUIREMENT 5b: 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.

Selected Facility to Visit:

Parent's Name

Phone

Parent's Signature

Date

☐

permission

Notes:



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REQUIREMENT 6:

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.

REQUIREMENT 6a:

Identify the objectives (establish goals).

Notes:



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REQUIREMENT 6b: Plan the mission. Create an expedition agenda or schedule. List potential documents or permits needed.

Plan:

Agenda / Schedule:

Documents / Permits Needed:



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REQUIREMENT 6c: Budget and plan for adequate financial resources. Estimate costs for travel, equipment, accommodations, meals, permits or licenses, and other expedition expenses.

Notes:

REQUIREMENT 6d: Determine equipment and supplies required for personal and mission needs for the length of the expedition.

Notes:



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REQUIREMENT 6e: 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.

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REQUIREMENT 6f: Establish safety and first aid procedures (including planning for medical evacuation).

Notes:



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REQUIREMENT 6f: Identify the hazards that explorers could encounter on the expedition, and establish procedures to prevent or avoid those hazards.

Hazard #1:

Procedure to Prevent or Avoid this Hazard:

Hazard #2:

Procedure to Prevent or Avoid this Hazard:

Hazard #2:

Procedure to Prevent or Avoid this Hazard:



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Hazard #4:

Procedure to Prevent or Avoid this Hazard:

Hazard #5:

Procedure to Prevent or Avoid this Hazard:

Hazard #6:

Procedure to Prevent or Avoid this Hazard:



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Hazard #7:

Procedure to Prevent or Avoid this Hazard:

Hazard #8:

Procedure to Prevent or Avoid this Hazard:

Hazard #9:

Procedure to Prevent or Avoid this Hazard:



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REQUIREMENT 6g: Determine team selection. Identify who is essential for the expedition to be successful and what skills are required by the expedition leader.

Notes:

REQUIREMENT 6h: Establish detailed recordkeeping (documentation) procedures. Plan the interpretation and sharing of information at the conclusion of the expedition.

Notes:



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REQUIREMENT 7:

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.

Location to Explore:

Parent's Name

Phone

Parent's Signature

Date

☐

permission

COUNSELOR APPROVAL: PERHAPS IMPLIED, THIS REQUIREMENT DOES NOT STATE THAT YOU NEED THE COUNSELOR'S APPROVAL AHEAD OF TIME TO RESEARCH AND PREPARE. PLEASE NOTE, AS WITH ANY REQUIREMENT, ACCEPTANCE IS AT THE DISCRETION AND SATISFACTION OF THE MERIT BADGE COUNSELOR.

Counselor's Name

Phone

Counselor's Signature

Date

☐

approval

Notes:



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REQUIREMENT 7a: 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).

This requirement must be done under the supervision of someone outlined in the requirement component.

This requirement must be reviewed with your merit badge counselor.

BE PREPARED!

Qualified Adult Experienced in Exploration Name:

Credentials and Contact Info:

Notes:



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REQUIREMENT 7b: 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.

If additional space for equipment or supplies is need, please use an additional sheet of paper

BE PREPARED!

EQUIPMENT ITEM #1 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

EQUIPMENT ITEM #2 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:



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EQUIPMENT ITEM #3 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

EQUIPMENT ITEM #4 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

EQUIPMENT ITEM #5 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:



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EQUIPMENT ITEM #6 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

EQUIPMENT ITEM #7 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

EQUIPMENT ITEM #8 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:



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SUPPLY ITEM #1 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

SUPPLY ITEM #2 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

SUPPLY ITEM #3 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:



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SUPPLY ITEM #4 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

SUPPLY ITEM #5 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

SUPPLY ITEM #6 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:



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SUPPLY ITEM #7 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

SUPPLY ITEM #8 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:

SUPPLY ITEM #9 NEEDED:

Name of item:

Why you chose this item:

Value of the item to the Expedition:



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REQUIREMENT 7c:

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.

The “**Sweet 16 of BSA Safety**” has been an integral part of the standard of care which must be exercised during the planning and conduct of Scouting’s outdoor program for decades. However, as of 2021, the “Sweet 16” is phased out in favor of BSA’s **new S.A.F.E. activity criteria**. Nonetheless, the “Sweet 16’s” precepts can continue to provide guidance for Scout volunteers.

The respective aspects of the “Sweet 16”
(generally embodied in the S.A.F.E. criteria) are as follows:

Qualified Supervision

Physical Fitness

Buddy System

Safe Area or Course

Equipment Selection and Maintenance

Personal Safety Equipment

Safety Procedures and Policies

Skill Level Limits

Weather Check

Planning

Communications

Plans and Notices

First Aid Resources

Applicable Laws

CPR Resource

Discipline

BSA’s Scouter Code of Conduct requires that an adult leader “be familiar with, and follow” BSA’s S.A.F.E. criteria, as opposed to the Sweet 16 of BSA Safety. However, the precepts of the Sweet 16 continue to be relevant to the conduct and planning of an outdoor activity. Keep them in mind!

Don’t forget to bring your print outs with you to share with the merit badge counselor.

This requirement must be reviewed with your merit badge counselor.

BE PREPARED!



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THE SWEET SIXTEEN OF BSA SAFETY

1. QUALIFIED SUPERVISION

Every BSA activity should be supervised by a conscientious adult who understands and knowingly accepts responsibility for the well-being and safety of the children and youth in his or her care. The supervisor should be sufficiently trained, experienced, and skilled in the activity to be confident of his/her ability to lead and to teach the necessary skills and to respond effectively in the event of an emergency. Field knowledge of all applicable BSA standards and a commitment to implement and follow BSA policies and procedures are essential parts of the supervisor's qualifications.

2. PHYSICAL FITNESS

For youth participants in any potentially strenuous activity, the supervisor should receive a complete health history from a health-care professional, parent, or guardian. Adult participants and youth involved in higher-risk activity (e.g., scuba) may require professional evaluation in addition to the health history. The supervisor should adjust all supervision, discipline, and protection to anticipate potential risks associated with individual health conditions. Neither youth nor adults should participate in activities for which they are unfit. To do so would place both the individual and others at risk.

3. BUDDY SYSTEM

The long history of the buddy system in Scouting has shown that it is always best to have at least one other person with you and aware at all times as to your circumstances and what you are doing in any outdoor or strenuous activity.

4. SAFE AREA OR COURSE

A key part of the supervisor's responsibility is to know the area or course for the activity and to determine that it is well-suited and free of hazards.

5. EQUIPMENT SELECTION AND MAINTENANCE

Most activity requires some specialized equipment. The equipment should be selected to suit the participant and the activity and to include appropriate safety and program features. The supervisor should also check equipment to determine that it is in good condition for the activity and is properly maintained while in use.

6. PERSONAL SAFETY EQUIPMENT

The supervisor must ensure that every participant has and uses the appropriate personal safety equipment. For example, activity afloat requires a life jacket properly worn by each participant; bikers, horseback riders, and whitewater kayakers need helmets for certain activities; skaters may need protective gear; and all need to be dressed for warmth and utility depending on the circumstances.

7. SAFETY PROCEDURES AND POLICIES

For most activities, there are common-sense procedures and standards that can greatly reduce the risk. These should be known and appreciated by all participants, and the supervisor must ensure compliance.

8. SKILL LEVEL LIMITS

There is a minimum skill level requirement for every activity, and the supervisor must identify and recognize this minimum skill level and be sure that no participants are put at risk by attempting an activity beyond their ability. A good example of skill levels in Scouting is the venerable swim test, which defines conditions for safe swimming based on individual ability.

9. WEATHER CHECK

The risk factors in many outdoor activities vary substantially with weather conditions. These variables and the appropriate response should be understood and anticipated.

10. PLANNING

Safe activity follows a plan that has been conscientiously developed by an experienced supervisor or other competent source. Good planning minimizes risks and also anticipates contingencies that may require emergency response or a change of plan.

11. COMMUNICATIONS

The supervisor needs to be able to communicate effectively with participants as needed during the activity. Emergency communications also need to be considered in advance for any foreseeable contingencies.

12. PLANS AND NOTICES

Council office registration, government or landowner authorization, and any similar formalities are the supervisor's responsibility when such are required. Appropriate notification should be directed to parents, enforcement authorities, landowners, and others as needed, before and after the activity.

13. FIRST-AID RESOURCES

The supervisor should determine what first-aid supplies to include among the activity equipment. The level of first-aid training and skill appropriate for the activity should also be considered. An extended trek over remote terrain obviously may require more first-aid resources and capabilities than an afternoon activity in the local community. Whatever is determined to be needed should be available.

14. APPLICABLE LAWS

BSA safety policies generally run parallel or go beyond legal mandates, but the supervisor should confirm and ensure compliance with all applicable regulations or statutes.

15. CPR RESOURCE

Any strenuous activity or remote trek could present a cardiac emergency. Aquatics programs may involve cardiopulmonary emergencies. The BSA strongly recommends that a CPR-trained person (preferably an adult) be part of the leadership for any BSA program. Such a resource should be available for strenuous outdoor activity.

16. DISCIPLINE

No supervisor is effective if he or she cannot control the activity and the individual participants. Youth must respect their leader and follow his or her direction.



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Scouts and their parents expect all Boy Scouts of America activities to be conducted safely. To ensure the safety of participants, the Boy Scouts of America expects leaders to use the four points of SAFE when delivering the Scouting program.

SUPERVISION

Youth are supervised by qualified and trustworthy adults who set the example for safety.

- Accepting responsibility for the well-being and safety of youth under their care.
- Ensuring that adults are adequately trained, experienced, and skilled to lead the activity, including the ability to prevent and respond to likely problems and potential emergencies.
- Knowing and delivering the program of the Boy Scouts of America with integrity.
- Using qualified instructors, guides, or safety personnel as needed to provide additional guidance.
- Maintaining engagement with participants during activities to ensure compliance with established rules and procedures.

ASSESSMENT

Activities are assessed for risks during planning. Leaders have reviewed applicable program guidance or standards and have verified the activity is not prohibited. Risk avoidance or mitigation is incorporated into the activity.

- Predetermining what guidance and standards are typically applied to the activity, including those specific to the Boy Scouts of America program.
- Planning for safe travel to and from the activity site.
- Validating the activity is age appropriate for the Boy Scouts of America program level.
- Determining whether the unit has sufficient training, resources, and experience to meet the identified standards, and if not, modifying the activity accordingly.
- Developing contingency plans for changes in weather and environment and arranging for communication with participants, parents, and emergency services.

FITNESS AND SKILL

Participants' Annual Health and Medical Records are reviewed, and leaders have confirmed that prerequisite fitness and skill levels exist for participants to take part safely.

- Confirming the activity is right for the age, maturity, and physical abilities of participants.
- Considering as risk factors temporary or chronic health conditions of participants.
- Validating minimum skill requirements identified during planning and ensuring participants stay within the limits of their abilities.
- Providing training to participants with limited skills and assessing their skills before they attempt more advanced skills.

EQUIPMENT AND ENVIRONMENT

Safe and appropriately sized equipment, courses, camps, campsites, trails, or playing fields are used properly. Leaders periodically check gear use and the environment for changing conditions that could affect safety.

- Confirming participants' clothing is appropriate for expected temperatures, sun exposure, weather events, and terrain.
- Providing equipment that is appropriately sized for participants, is in good repair, and is used properly.
- Ensuring personal and group safety equipment is available, properly fitted, and used consistently and in accordance with training.
- Reviewing the activity area for suitability during planning and immediately before use, and monitoring the area during the activity through supervision.
- Adjusting the activity for changing conditions or ending it if safety cannot be maintained.



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Notes:



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Expeditions are widely variable. You do not have to climb Mount Everest or go to a jungle to be an explorer. For this merit badge, an expedition should be viewed like a field trip or science project. While you cannot just hike some place and call it an expedition, you can hike to a location and study an aspect that interests you.

The major difference between an expedition and a field science trip is that you (with your counselor's guidance) have to plan everything. You have to formulate objectives and plan an agenda. As needed, you will need to do things like confirm transportation, arrange communication, plan for food and medical supplies, acquire all food and other supplies, construct safety and possible evacuation procedures, manage any adverse events, and prepare a report after the expedition.

Evaluating the effects of a storm on the local forest or nature preserve, the effects of a drought on a field used by birds and mammals, changes in butterfly populations due to loss of wildflower habitat, incursions by invasive plant or animal species, insect diversity, and presence or absence of amphibians or fish are just some of the examples that can be studied and reported. Your imagination is your only limitation.

REQUIREMENT 8a:

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.

Parent's Name

Phone

Parent's Signature

Date

☐

permission

Notes:



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REQUIREMENT 8b: Discuss with your counselor what is outdoor ethics and its role in exploration and enjoying the outdoors responsibly.

Notes:

REQUIREMENT 8c: 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.

Notes:



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REQUIREMENT 9: Identify three career opportunities in exploration.

Career Opportunity #1:

Career Opportunity #2:

Career Opportunity #3:

REQUIREMENT 9: Pick one and explain to your counselor how to prepare for such a career. Discuss what education and training are required.

Selected Career Opportunity:

How to prepare for a career like this:

Educational Requirements:

Training Requirements:

REQUIREMENT 9: Explain why this profession might interest you.

Notes: