

Mining in Society

Merit Badge Workbook



This workbook can help you but you still need to read the merit badge pamphlet.

The work space provided for each requirement should be used by the Scout to make notes for discussing the item with his counselor, not for providing the full and complete answers. Each Scout must do each requirement.

No one may add or subtract from the official requirements found in ***Boy Scout Requirements*** (Pub. 33216 – SKU 619576).

The requirements were last issued or revised in 2014 • This workbook was updated in February 2014.

Scout's Name:_____ Unit: _____

Counselor's Name: _____ Counselor's Phone No.: _____

http://www.USScouts.Org • http://www.MeritBadge.Org

Please submit errors, omissions, comments or suggestions about this **workbook** to: Workbooks@USScouts.Org
Comments or suggestions for changes to the **requirements** for the **merit badge** should be sent to: Merit.Badge@Scouting.Org

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NOTE: This is a NEW Merit Badge. The requirements listed below appear in the **Mining in Society merit badge pamphlet, and will be added to the 2015 edition of **Boy Scout Requirements**.*

1. Do the following:
   a. Select 10 different minerals. For each one, name a product for which the mineral is used.

	Mineral	Product for which the mineral is used
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

   b. Explain the role mining has in production and processing things that are grown.

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c. From the list of minerals you chose for 1a, determine the countries where those minerals can be found, and discuss what you learned with your counselor.

	Mineral	Countries where the mineral can be found
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Discuss what you learned with your counselor.

☐ 2. Obtain a map of your state or region showing major cities, highways, rivers, and railroads.

☐ Mark the locations of five different mining enterprises.

Find out what resource is processed at each location, and identify the mine as a surface or underground operation.

	Location	What resource is processed	Surface or Underground?
1.			
2.			
3.			
4.			
5.			

Discuss with your counselor how the resources mined at these locations are used.

1.
2.
3.
4.
5.

3. Discuss with your counselor the potential hazards a miner may encounter at an active mine and the protective measures used by miners.

In your discussion, explain how:

a. The miner's personal protective equipment is worn and used, including a hard hat, safety glasses, earplugs, dust mask or respirator, self-rescue device, and high-visibility vest.

Hard hat	
Safety glasses	
Earplugs	
Dust mask or respirator	
Self-rescue device	
High-visibility vest	

b. Miners protect their hands and feet from impact, pinch, vibration, slipping, and tripping/falling hazards.

Impact hazards	
Pinch hazards	
Vibration hazards	
Slipping hazards	

Tripping/falling hazards	

c. Monitoring equipment warns miners of imminent danger, and how robots are used in mine rescues.

and how robots are used in mine rescues.

4. Discuss with your counselor the dangers someone might encounter at an abandoned mine.

Include information about the “Stay out—Stay Alive” program.

5. Do one of the following:

☐ a. With your parent's approval and your counselor's assistance, use the Internet to find and take a virtual tour of two types of mines.

	Type of Mine	Location	Date of Virtual Tour
1.			
2.			

Determine the similarities and differences between them regarding resource exploration, mine planning and permitting, types of equipment used, and the minerals produced.

	Similarities	Differences
Resource exploration		
Mine planning planning and permitting		
Types of equipment used		
Minerals produced		

Discuss with your counselor what you learned from your Internet-based mine tours.

☐ b. With your parent's permission and counselor's approval, visit a mining or minerals exhibit at a museum.

Museum		Exhibit		Date	

Find out about the history of the museum's exhibit and the type of mining it represents.

Type of mining it represents	

Give three examples of how mineral resources have influenced history.

1.	
2.	
3.	

☐ c. With your parent's permission and counselor's approval, visit an active mine.*

Mine Visited:		Date:	

Find out about the tasks required to explore, plan, permit, mine, and process the resource mined at that site.

Explore	
Plan	
Permit	
Mine	
Process the resource	

☐ Take photographs if allowed, and request brochures from your visit.

Share photos, brochures, and what you have learned with your counselor.

*Visiting a mine site, a mining equipment manufacturer, or an equipment supplier requires advance planning. These sites can be potentially dangerous. You will need permission from your parents and counselor, and the manager of the mine site, or equipment manufacturer or supplier. While there, you will be required to follow closely the site manager's instructions and comply with all safety rules and procedures, including wearing appropriate clothing, footwear, and personal safety equipment.

☐ d. With your parent's permission and counselor's approval, visit a mining equipment manufacturer or supplier.*

Place Visited: Date:

Discuss the types of equipment produced or supplied there, and in what part of the mining process this equipment is used.

Types of equipment produced or supplied:

In what part of the mining process is this equipment used.:

☐ Take photographs if allowed, and request brochures from your visit.

Share photos, brochures, and what you have learned with your counselor.

☐ e. Discuss with your counselor two methods used to reduce rock in size, one of which uses a chemical process to extract a mineral.

1.

2.

Explain the difference between smelting and refining.

☐ f Learn about the history of a local mine, including what is or was mined there, how the deposit was found, the mining techniques and processes used, and how the mined resource is or was used.

What is or was mined there	
How was the deposit found	
Techniques and processes used	
How the mined resource is or was used	

Find out from a historian, community leader, or business person how mining has affected your community.

Note any social, cultural, or economic consequences of mining in your area.

Share what you have learned with your counselor.

6. Do the following:
   a. Choose a modern mining site. _____

      Find out what is being done to help control environmental impacts.

      Share what you have learned about mining and sustainability.

   b. Explain reclamation as it is used in mining and how mine reclamation pertains to Scouting's no-trace principles.

c. Discuss with your counselor what values society has about returning the land to the benefit of wildlife and people after mining has ended.

Discuss the transformation of the BSA Summit Bechtel Family National Scout Reserve from a mine site to its current role.

7. Do one of the following:

☐ a. Explore the anticipated benefits of interplanetary mining. Learn how NASA and private investors may search for, extract, and process minerals in outer space, and the primary reasons for mining the moon, other planets, or near-Earth asteroids. Find out how exploration and mineral processing in space differ from exploration on Earth. Share what you have learned with your counselor, and discuss the difficulties encountered in exploring, collecting, and analyzing surface or near-surface samples in outer space.

☐ b. Identify three minerals found dissolved in seawater or found on the ocean floor, and list three places where the ocean is mined today.

	Minerals found dissolved in seawater or found on the ocean floor	Places where the ocean is mined today
1.		
2.		
3.		

Share this information with your counselor, and discuss the chief incentives for mining the oceans for minerals, the reclamation necessary after mining is over, and any special concerns when mining minerals from the ocean. Find out what sustainability problems arise from mining the oceans. Discuss what you learn with your counselor.

☐ c. Learn what metals and minerals are recycled after their original use has ended.

List four metals and two nonmetals, and find out how each can be recycled.

	Metals:	How can it be recycled?
1.		
2.		
3.		
4.		

	Nonmetals	How can it be recycled?
1.		
2.		

Find out how recycling affects the sustainability of natural resources and how this idea is related to mining.

Discuss what you learn with your counselor.

☐ d. With your parent's permission, use the Internet and other resources to determine the current price of gold, copper, aluminum, or other commodities like cement or coal, and find out the five-year price trend for two of these.

	Commodity	Current Price	Five-year price trend
☐	Gold		
☐	Copper		
☐	Aluminum		
☐	Cement		
☐	Coal		
☐			

Report your findings to your counselor.

8. Do one of the following:

☐ a. With your parent's and counselor's approval, meet with a worker in the mining industry.

Worker: _____ Date: _____

Discuss the work, equipment, and technology used in this individual's position, and learn about a current project. Ask to see reports, drawings, and/or maps made for the project. Find out about the educational and professional requirements for this individual's position. Ask how the individual's mining career began. Discuss with your counselor what you have learned.

☐ b. Find out about three career opportunities in the mining industry.

1.	
2.	
3.	

Pick one and find out the education, training, and experience required for this profession.

Career	
Education	
Training	
Experience	

Discuss this with your counselor, and explain why this profession might interest you.

☐ c. With your parent's permission and counselor's approval, visit a career academy or community college to learn about educational and training requirements for a position in the mining industry that interests you.

Location visited:	
Position that interests you:	

Find out why this position is critical to the mining industry, and discuss what you learned with your counselor.

Requirement resources can be found here:
http://www.meritbadge.org/wiki/index.php/Mining in Society#Requirement resources

Important excerpts from the *Guide To Advancement - 2013*, No. 33088 (SKU-618673)

[1.0.0.0] — Introduction
The current edition of the *Guide to Advancement* is the official source for administering advancement in all Boy Scouts of America programs: Cub Scouting, Boy Scouting, Varsity Scouting, Venturing, and Sea Scouts. It replaces any previous BSA advancement manuals, including *Advancement Committee Policies and Procedures*, *Advancement and Recognition Policies and Procedures*, and previous editions of the *Guide to Advancement*.

[Page 2, and 5.0.1.4] — Policy on Unauthorized Changes to Advancement Program
No council, committee, district, unit, or individual has the authority to add to, or subtract from, advancement requirements. There are limited exceptions relating only to youth members with special needs. For details see section 10, "Advancement for Members With Special Needs".

[Page 2] — The "Guide to Safe Scouting" Applies
Policies and procedures outlined in the ***Guide to Safe Scouting***, No. 34416, apply to all BSA activities, including those related to advancement and Eagle Scout service projects.

[7.0.3.1] — The Buddy System and Certifying Completion
A youth member must not meet one-on-one with an adult. Sessions with counselors must take place where others can view the interaction, or the Scout must have a buddy: a friend, parent, guardian, brother, sister, or other relative—or better yet, another Scout working on the same badge—along with him attending the session.
When the Scout meets with the counselor, he should bring any required projects. If these cannot be transported, he should present evidence, such as photographs or adult verification. His unit leader, for example, might state that a satisfactory bridge or tower has been built for the Pioneering merit badge, or that meals were prepared for Cooking. If there are questions that requirements were met, a counselor may confirm with adults involved. Once satisfied, the counselor signs the blue card using the date upon which the Scout completed the requirements, or in the case of partials, initials the individual requirements passed.
Note that from time to time, it may be appropriate for a requirement that has been met for one badge to also count for another. See "Fulfilling More Than One Requirement With a Single Activity," 4.2.3.6.

[7.0.3.2] — Group Instruction
It is acceptable—and sometimes desirable—for merit badges to be taught in group settings. This often occurs at camp and merit badge midways or similar events. Interactive group discussions can support learning. The method can also be attractive to "guest experts" assisting registered and approved counselors. Slide shows, skits, demonstrations, panels, and various other techniques can also be employed, but as any teacher can attest, not everyone will learn all the material.
There must be attention to each individual's projects and his fulfillment of *all* requirements. We must know that every Scout —actually and *personally*— completed them. If, for example, a requirement uses words like "show," "demonstrate," or "discuss," then every Scout must do that. It is unacceptable to award badges on the basis of sitting in classrooms *watching* demonstrations, or remaining silent during discussions.
It is sometimes reported that Scouts who have received merit badges through group instructional settings have not fulfilled all the requirements. To offer a quality merit badge program, council and district advancement committees should ensure the following are in place for all group instructional events.

- Merit badge counselors are known to be registered and approved.
- Any guest experts or guest speakers, or others assisting who are not registered and approved as merit badge counselors, do not accept the responsibilities of, or behave as, merit badge counselors, either at a group instructional event or at any other time. Their service is temporary, not ongoing.
- Counselors agree not to assume prerequisites have been completed without some level of evidence that the work has been done. Pictures and letters from other merit badge counselors or unit leaders are the best form of prerequisite documentation when the actual work done cannot be brought to the camp or site of the merit badge event.
- There is a mechanism for unit leaders or others to report concerns to a council advancement committee on summer camp merit badge programs, group instructional events, and any other merit badge counseling issues—especially in instances where it is believed BSA procedures are not followed. See "Reporting Merit Badge Counseling Concerns," 11.1.0.0.
- There must be attention to each individual's projects and his fulfillment of all requirements. We must know that every Scout—actually and personally—completed them.

[7.0.3.3] — Partial Completions
A Scout need not pass all the requirements of one merit badge with the same counselor. It may be that due to timing or location issues, etc., he must meet with a different counselor to finish the badge. The Application for Merit Badge has a place to record what has been finished—a "partial." In the center section on the reverse of the blue card, the counselor initials for each requirement passed. In the case of a partial completion, the counselor does not retain his or her portion of the card. A subsequent counselor may choose not to accept partial work, but this should be rare. A Scout, if he believes he is being treated unfairly, may work with his unit leader to find another counselor. An example for the use of a signed partial would be to take it to camp as proof of prerequisites. Partials have no expiration except the Scout's 18th birthday. Units, districts, or councils shall not establish other expiration dates for partial merit badges.

[7.0.4.8] — Unofficial Worksheets and Learning Aids
Worksheets and other materials that may be of assistance in earning merit badges are available from a variety of places including unofficial sources on the Internet and even troop libraries. Use of these aids is permissible as long as the materials can be correlated with the current requirements that Scouts must fulfill. Completing "worksheets" may suffice where a requirement calls for something in writing, but this would not work for a requirement where the Scout must discuss, tell, show, or demonstrate, etc. Note that Scouts shall not be required to use these learning aids in order to complete a merit badge.