

GEOLOGY MERIT BADGE WORKBOOK

This Scoutmaster Bucky Merit Badge Workbook is based off the current *Scouts BSA Requirements*.

Consider also using the Geology merit badge class preparation page for clarification and expectations when participating in a Scoutmaster Bucky merit badge opportunity ([online](#) or [in-person](#)).

<https://scoutmasterbucky.com/merit-badges/geology/>

Scout's
Name:

Energy Resources Option

This workbook covers only one of the options for this merit badge. Check the Scoutmaster Bucky website for the other possibilities.

REQUIREMENT 1: Define geology. Discuss how geologists learn about rock formations. In geology, explain why the study of the present is important to understanding the past.

Define geology

How geologists learn about rock formations

Why the study of the present is important to understanding the past

REQUIREMENT 2: Pick three resources that can be extracted or mined from Earth for commercial use. Discuss with your counselor how each product is discovered and processed.

REQUIREMENT 3: Review a geologic map of your area or an area selected by your counselor, and discuss the different rock types and estimated ages of rocks represented. Determine whether the rocks are horizontal, folded, or faulted, and explain how you arrived at your conclusion.

Completed

REQUIREMENT 4: Do ONE of the following:

REQUIREMENT A: With your parent's and counselor's approval, visit with a geologist, land-use planner, or civil engineer. Discuss this professional's work and the tools required in this line of work. Learn about a project that this person is now working on, and ask to see reports and maps created for this project. Discuss with your counselor what you have learned.

This professional's work

The tools required

A project that this person is now working on

Asked to see reports and maps created for this project

What you have learned

REQUIREMENT B: Find out about three career opportunities available in geology. 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.

Three career opportunities

Education, training, and experience required for one profession

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

REQUIREMENT C: Mineral Resources Option

REQUIREMENT 1: Define rock. Discuss the three classes of rocks including their origin and characteristics.

Define rock

First class of rock

Second class of rock

Third class of rock

REQUIREMENT 2: Define mineral. Discuss the origin of minerals and their chemical composition and identification properties, including hardness, specific gravity, color, streak, cleavage, luster, and crystal form.

Define material

Origin of minerals

Chemical composition

Hardness

Specific gravity

Color

Streak

Cleavage

Luster

Crystal form

REQUIREMENT 3: Do ONE of the following:

REQUIREMENT A: Collect 10 different rocks or minerals. Record in a notebook where you obtained (found, bought, traded) each one. Label each specimen, identify its class and origin, determine its chemical composition, and list its physical properties. Share your collection with your counselor.

Specimen #1

Rock or mineral	Where obtained	Class and origin

Chemical composition	Physical properties

Specimen #2

Rock or mineral	Where obtained	Class and origin

Chemical composition	Physical properties

Specimen #3

Rock or mineral	Where obtained	Class and origin

Chemical composition	Physical properties

Specimen #4

Rock or mineral	Where obtained	Class and origin

Chemical composition	Physical properties

Specimen #5

Rock or mineral	Where obtained	Class and origin

Chemical composition	Physical properties

Specimen #6

Rock or mineral	Where obtained	Class and origin

Chemical composition	Physical properties

Specimen #7

Rock or mineral	Where obtained	Class and origin

Chemical composition		Physical properties	
Specimen #8			
Rock or mineral	Where obtained	Class and origin	
Chemical composition		Physical properties	
Specimen #9			
Rock or mineral	Where obtained	Class and origin	
Chemical composition		Physical properties	
Specimen #10			
Rock or mineral	Where obtained	Class and origin	
Chemical composition		Physical properties	

REQUIREMENT 4: List three of the most common road building materials used in your area. Explain how each material is produced and how each is used in road building.

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REQUIREMENT 5: Do ONE of the following activities:

REQUIREMENT A: With your parent's and counselor's approval, visit an active mining site, quarry, or sand and gravel pit. Tell your counselor what you learned about the resources extracted from this location and how these resources are used by society.

Visited an active mining site, quarry, or sand and gravel pit

Resources extracted from this location and how these resources are used by society

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REQUIREMENT B: With your counselor, choose two examples of rocks and two examples of minerals. Discuss the mining of these materials and describe how each is used by society.

Completed

REQUIREMENT C: With your parent's and counselor's approval, visit the office of a civil engineer and learn how geology is used in construction. Discuss what you learned with your counselor.

Visited office

What you learned

REQUIREMENT 6: Do ONE of the following:

REQUIREMENT A: Visit a science museum or the geology department of a local university that has fossils on display. With your parent's and counselor's approval, before you go, make an appointment with a curator or guide who can show you how the fossils are preserved and prepared for display.

Completed

REQUIREMENT B: Visit a structure in your area that was built using fossiliferous rocks. Determine what kind of rock was used and tell your counselor the kinds of fossil evidence you found there.

REQUIREMENT C: Visit a rock outcrop that contains fossils. Determine what kind of rock contains the fossils, and tell your counselor the kinds of fossil evidence you found at the outcrop.

REQUIREMENT D: Prepare a display or presentation on your state fossil. Include an image of the fossil, the age of the fossil, and its classification. You may use maps, books, articles from periodicals, and research found on the internet (with your parent's permission). Share the display with your counselor or a small group (such as your class at school). If your state does not have a state fossil, you may select a state fossil from a neighboring state.

Completed