



# GEOLOGY

## BYU Merit Badge PowWow

### Official Merit Badge Worksheet

Scout's Name

Instructor's Name

Scout's Address

City

State

ZIP

#### Instructions

- 1) The Scout is to review the merit badge book before the first week of the PowWow.
- 2) Bring this worksheet, paper, and pencil or pen each week
- 3) **Bring a Merit Badge blue card with you on the second week.**

#### Requirement Instructions\*

- 1) Requirements 1, 2, 3, and 4 should be passed off during the two sessions of PowWow.
- 2) Requirement 5 should be started during the first session of PowWow, however, it must be completed as **homework between the two sessions of PowWow.**

**\* Due to possible time constraints at the PowWow, certain requirements that were originally planned to be completed in class may need to be completed as homework. Please LISTEN to ALL INSTRUCTIONS in class to be aware of any changes.**

#### Requirement 1

**Initial**

Define geology.

Explain how geologists learn about rock formations.

Explain why the study of the present is important to understanding the past.

#### Requirement 2

**Initial**

Pick three resources that can be extracted or mined from Earth for commercial use. Explain how each product is discovered and processed.

1. Resource:

Discovered:

Processed:

2. Resource:  
Discovered:

Processed:

3. Resource:  
Discovered:

Processed:

### **Requirement 3**

**Initial**

Review a geologic map of your area.

List the different rock types and the estimated ages of the rocks represented. Determine whether the rocks are horizontal, folded, or faulted. Explain how you arrived at your conclusion.

Type:

Estimated Age:

Horizontal, Folded, or Faulted:

How did you determine?

Type:

Estimated Age:

Horizontal, Folded, or Faulted:

How did you determine?

Type:

Estimated Age:

Horizontal, Folded, or Faulted:

How did you determine?

Type:

Estimated Age:

Horizontal, Folded, or Faulted:

How did you determine?

Other:

#### **Requirement 4**

**Initial**

Do ONE of the following:

a. Visit with a geologist, landuse planner, or civil engineer 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 what you have learned.

b. Find out about three career opportunities available in geology. Pick one and find out the education, training and experience required for the profession

Career

Education

Training

Why does this interest you?

## Requirement 5

Initial

*We will complete the Surface and Sedimentary Processes Option (Option A) for this requirement.*

a. Conduct an experiment approved by your counselor that demonstrates how sediments settle from suspension in water. Explain to your counselor what the exercise shows and why it is important.

b. Using topographical maps provided by your counselor, plot the stream gradients (different elevations divided by distance) for four different stream types (straight, meandering, dendritelike, trellis).

Explain which ones flow fastest and why.

Explain which ones will carry larger grains of sediment and why.

c. On a stream diagram, show areas where you will find the following features. Describe the relative sediment grain size found in each feature:

Cut Bank:

Fill Bank:

Point Bar:

Medial Channel Bars:

Lake Delta:

d. Conduct an experiment approved by your counselor that shows how some sedimentary material carried by water may be too small for you to see without a magnifier.

e. Visit a nearby stream. Find clues that show the direction of water flow, even if the water is missing. Record your observations in a notebook, and sketch those clues you observe. Show your notebook to your counselor.

Explain your observations.

**Merit badge work sheets will not be accepted at the Council Office in place of the official Merit Badge Application Card. Those who do not complete all the requirements should take their partially completed merit badge work sheet and their official application card to their local merit badge counselors for completion.**

You've registered for one of these Hornaday merit badges at this PowWow and are invited to attend a special session immediately following each day of PowWow classes on how to make your Eagle Project count for a Hornaday Badge, as well. Please join us in CB 256, just off of the registration area, from 12:30-1:30 pm.