

G117 Laboratory 12

Resources and Sustainability

ACTIVITY 12.1 Finding resources at home

Name: _____ Course/Section: _____

Materials: Pencil, lab manual, and access to internet to visit the Minerals Education Coalition website (<https://mineralseducationcoalition.org/mining-minerals-information/minerals-in-your-life/>).

A. List and briefly explain the **geologic processes** (Table 1) in which mineral and rock resources can be created or concentrated.

B. What is the difference between a **resource** and a **reserve**?

C. Study Figure 16. Find the placer deposits (yellow).

C1. Where are these located?

C2. Describe the geologic setting of each (e.g., at the foot of a mountain, in a basin, on a mountain...etc.).

C3. Thinking about how placer deposits are formed, explain how rare earth metals might concentrate in these areas.

G117 Laboratory 12

Resources and Sustainability

D. Go to the Minerals Education Coalition website. (URL given on the pervious page.) View the Fact Sheets.

D1. Click on "Cell Phone." List at five resources used and where they are mined.

D2. Click on "CFL Light Bulb." What are these made of? List the three main components and how/where they are mined.

E. Go to this page of the Minerals Education Coalition website:

<http://www.mineralseducationcoalition.org/minerals> Click on at least five minerals listed there. Fill out the table.

Mineral	What is it used for? Do you own anything that uses it? If so what?	How and where is it mined?	What process formed it?

G117 Laboratory 12

Resources and Sustainability

ACTIVITY 12.2 Finding resources around you

Name: _____ Course/Section: _____

Materials: Pencil, lab manual, ruler, rock ID kit, Scavenger Hunt Clue list, campus map, and a digital camera or camera phone.

- A. Complete the table below by walking around campus and completing the tasks in the scavenger hunt. You will submit this form to your instructor at the end of the class period. You will show your pictures to your instructor at that time. Get as far as you can and completely fill out each row before moving on to the next clue. You must return to SL118 before class ends. **Mark on the map where you found the structures by circling the area and writing the corresponding number in the circle.**

#	Answer to the bolded question in the Clue List.	Mineral / Rock Resource	What process formed or concentrated this resource (igneous, metamorphic, sedimentary, biological, or weathering)? (See Table 1.) Give a brief description of how the specific resource was formed.
1			
2			
3			

G117 Laboratory 12

Resources and Sustainability

#	Answer to the bolded question in the Clue List.	Mineral / Rock Resource	What process formed or concentrated this resource (igneous, metamorphic, sedimentary, biological, or weathering)? (See Table 1.) Give a brief description of how the specific resource was formed.
4			
5			
6			
7			
8			

G117 Laboratory 12

Resources and Sustainability

#	Answer to the bolded question in the Clue List.	Mineral / Rock Resource (ore)	What process formed or concentrated this resource (igneous, metamorphic, sedimentary, biological, or weathering)? (See Table 1.) Give a brief description of how the specific resource was formed.
9			
10			
11			
12			
13			

G117 Laboratory 12

Resources and Sustainability

#	Answer to the bolded question in the Clue List.	Mineral / Rock Resource (ore)	What process formed or concentrated this resource (igneous, metamorphic, sedimentary, biological, or weathering)? (See Table 1.) Give a brief description of how the specific resource was formed.
14			
15			

Reflection and Learning: The definition of *Sustainability* is that we use resources in a way that conserves them for future generations. The three assumptions are: (1) Resources are finite or nonrenewable. They cannot be recreated within a human lifetime. (2) Resources are being used faster than they can be replenished. (3) And that resources we use today will be needed by future generations.

B. Minerals and Sustainability: When looking around campus and thinking about the things that you own, do you think that these mineral and rock resources are renewable or nonrenewable? Give examples.

Do you think that they are being replenished as quickly as we are using them? Give examples.

Do you think that future generations will need these same resources? Give examples.

The IUPUI campus like many other college campuses is constantly being rebuilt and remodeled. When these buildings are torn down or remodeled, do you think that the mineral and rock resources should be reused? Explain.