

Student Self-Assessment Questions for Unit 1

These questions are included in the online reading in Student Materials

Question 1 Match the following mineral resource with the product that contains it.

Mineral resources	Products
1. copper (element from mineral bornite) D	A. car batteries
2. diamond (mineral with chemical formula C) C	B. cement
3. graphite (mineral with chemical formula C) G	C. drill bits (for drilling into rock)
4. gravel (rock fragments) F	D. electrical wires
5. iron (element from mineral magnetite) H	E. glass
6. lead (element from mineral galena) A	F. mixed with cement to make concrete
7. limestone (rock containing the mineral calcite, CaCO_3) F	G. pencil lead
8. quartz sand (quartz is a mineral with formula SiO_2) E	H. steel

Question 2 What will make a mineral useful as a drill bit?

- The mineral's hardness**
- The mineral's color
- The mineral's electrical conductivity
- The mineral's solubility

Question 3 What will make a mineral useful as an electrical wire?

- The mineral's hardness
- The mineral's color
- The mineral's electrical conductivity**
- The mineral's solubility

Question 4 Why is plastic not a mineral?

- It is not solid
- It is not chemically homogeneous
- It is not crystalline
- It is not natural**

Question 5 Which elements are in the list of the eight most abundant elements in Earth's crust?

- | | |
|--------------------|---------------------|
| a. Oxygen | h. Calcium |
| b. Carbon | i. Nitrogen |
| c. Silicon | j. Sodium |
| d. Phosphorus | k. Manganese |
| e. Iron | l. Magnesium |
| f. Aluminum | m. Zinc |
| g. Gold | n. Lead |

Question 6 The mineral quartz is made of the elements Silicon and Oxygen. Do you think quartz is a common mineral? Why or why not?

Because Silicon and Oxygen are the two most abundant elements, quartz should be a very abundant mineral.

Question 7 True/ **False**. Plastic is a rock. **Rocks must be natural.**

Question 8 To make an ice cube, you fill a tray with liquid water, which then freezes, making a coherent solid (a rock). Which rock type would the ice cube be?

- a. Metamorphic
- b. Igneous – the water is akin to magma, and cooling magma creates an igneous rock**
- c. Sedimentary

Question 9 How is world population changing?

- a. World population is increasing**
- b. World population is decreasing
- c. World population is staying the same

Question 10 As world population changes, what will happen to the global demand for mineral resources?

The demand for mineral resources will increase, as people demand these resources to meet their basic needs.

Question 11 Which is true about U.S. consumption of mineral resources?

- a. U.S. consumption is very high and increasing.** –Mainly because we continually buy new things (and throw out old things), not so much because of population change.
- b. U.S. consumption amounts have leveled off because our population growth is little.
- c. U.S. consumption amounts are declining because we recycle so much.

Question 12 As countries like India and China become more economically developed, what will happen to total amounts of mineral resource consumption (and amounts of mining) globally?

The global mineral resource consumption will increase to meet demand for objects, technology, and stuff that can be bought with increased income.