

## 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.

| <u>Mineral resources</u>   | <u>Products</u>                        |
|--|--|
| 1. copper (element from mineral bornite)                             | A. car batteries                       |
| 2. diamond (mineral with chemical formula C)                         | B. cement                              |
| 3. graphite (mineral with chemical formula C)                        | C. drill bits (for drilling into rock) |
| 4. gravel (rock fragments)   | D. electrical wires                    |
| 5. iron (element from mineral magnetite)                             | E. glass                               |
| 6. lead (element from mineral galena)                                | F. mixed with cement to make concrete  |
| 7. limestone (rock containing the mineral calcite, $\text{CaCO}_3$ ) | G. pencil lead                         |
| 8. quartz sand (quartz is a mineral with formula $\text{SiO}_2$ )    | 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?

**Question 7** True/ False. Plastic is a rock.

**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
- 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?

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

- a. U.S. consumption is very high and increasing.
- 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?