

## What are minerals?



### KEY TERMS

**abrasive:** an item used for scraping or rubbing

**ore:** mineral that is mined because it contains useful metals or nonmetals

# LESSON | What are minerals?

## 7

Many minerals are beautiful. Diamonds, sapphires, rubies, and emeralds are beautiful—and expensive. They are often worn as jewelry. So are other, less precious, minerals.

Minerals—even diamonds—have practical uses too. Here are a few examples.

**CUTTING AND GRINDING** Diamond is the hardest mineral on Earth. Diamonds are important in industry. They are used for cutting and grinding.

**ABRASIVES** Things used for rubbing are called **abrasives** [uh-BRAY-sivz]. Aluminum oxide and quartz are two minerals used as abrasives.

Very fine abrasives, such as emery paper, are used for polishing. Medium abrasives, such as scouring powder, are used for removing dirt. Rough abrasives, such as sandpaper, are used to rub off thicker and harder surfaces like wood and paint.

**GLASS-MAKING** Quartz is used in making some types of glass.

**PLASTER** Gypsum [JIP-sum] is used in plaster of paris, an important building material.

**ENERGY** Uranium releases atomic energy. Atomic energy is used to generate electricity. The need for electricity is steadily increasing.

**METAL PRODUCTS** Most metals come from minerals. We need metals for cooking, building, and many other uses. A mineral that is mined because it contains useful metals or nonmetals is an **ore**.

**FARMING** Mineral fertilizers help farmers grow bigger, healthier food crops.

People use great amounts of minerals. We must not waste them. We must learn ways to reuse minerals and to use them wisely. Nature is not putting back what people have taken out.

## USES OF MINERALS

Many products are made from minerals. Gypsum is used to make plaster of paris. Quartzite is used to make glass, sandpaper, and various electronic equipment. Diamonds are used to make jewelry. Diamonds are so hard that they also are used to make cutting and drilling tools.

Some kinds of minerals are needed by humans to keep the body in good health. Calcium and phosphorus are two minerals the body needs for strong bones and teeth. Iron is a mineral used by the body to make red blood cells.



Figure A

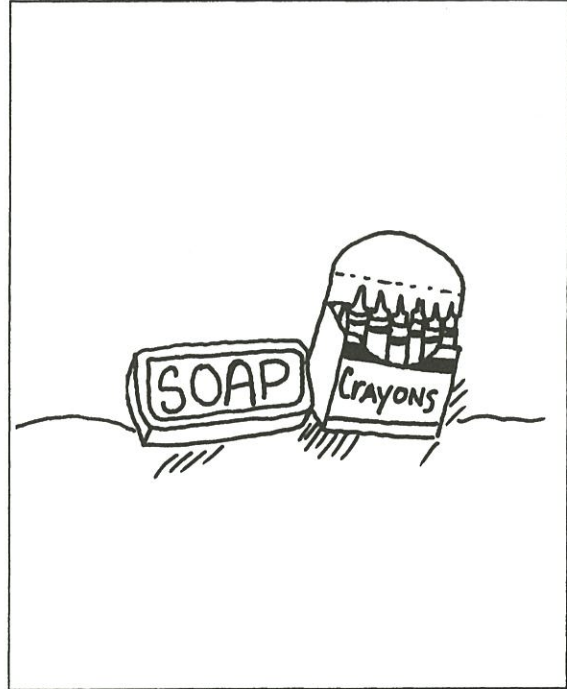


Figure B

Some minerals are rare and expensive. These minerals are called gems. Diamonds, rubies, and emeralds are examples of gems.

1. What are these minerals used for? \_\_\_\_\_
2. Are the shapes shown in Figure A the mineral's natural shape? \_\_\_\_\_

Gold and silver also are minerals.

3. Gold and silver are \_\_\_\_\_ .  
elements, compounds

The mineral talc has many uses. It is used to make soap, crayons, and talcum powder.

4. Talc is a \_\_\_\_\_ mineral.  
hard, soft

## USING MINERALS

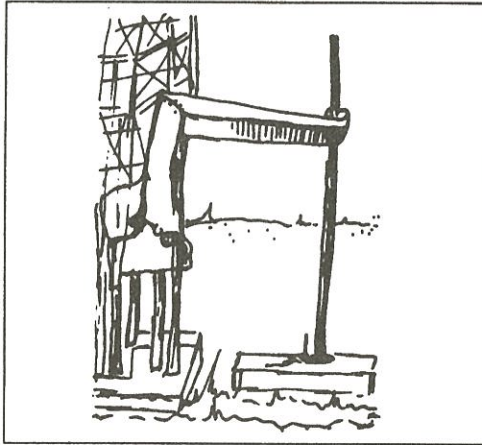


Figure C

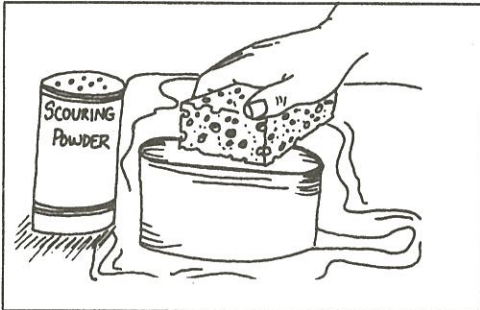


Figure D

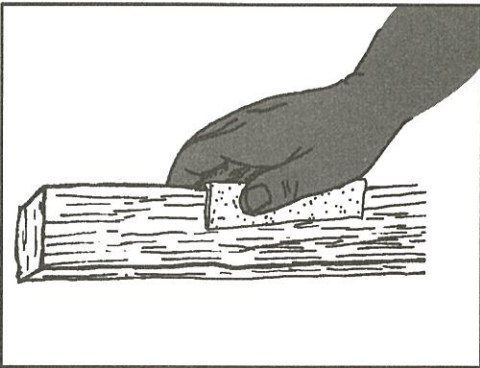


Figure E



Figure F

Some drill bits are tipped with diamond.

1. Diamond is \_\_\_\_\_ than rock.  
harder, softer
2. Diamond is \_\_\_\_\_ than steel.  
harder, softer

3. What would you use to clean this pot?  
\_\_\_\_\_

4. Which minerals might this product have?  
\_\_\_\_\_ or \_\_\_\_\_

5. Which mineral is used for most sandpaper?  
\_\_\_\_\_

6. Which mineral is found in plaster of paris?  
\_\_\_\_\_

## FILL IN THE BLANK

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Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some words may be used more than once.

aluminum oxide  
iron  
quartz

jewelry  
rough  
ores

hard  
soft  
gypsum

1. An abrasive feels \_\_\_\_\_.
2. The mineral most often used as an abrasive is \_\_\_\_\_.
3. Diamonds are used in industry because they are so \_\_\_\_\_.
4. Precious minerals are used mostly as \_\_\_\_\_.
5. Some glass contains \_\_\_\_\_.
6. Plaster of paris contains the mineral \_\_\_\_\_.
7. Scouring powder contains either quartz or \_\_\_\_\_.
8. Minerals that give us useful metals or nonmetals are called \_\_\_\_\_.
9. Talc is a \_\_\_\_\_ mineral.
10. The mineral used by the body to produce red blood cells is \_\_\_\_\_.

## MATCHING

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Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

### Column A

- \_\_\_\_\_ 1. abrasives  
\_\_\_\_\_ 2. ores  
\_\_\_\_\_ 3. quartz  
\_\_\_\_\_ 4. sapphire  
\_\_\_\_\_ 5. calcium and phosphorus

### Column B

- a) contain useful metals or nonmetals  
b) a precious gem  
c) needed for strong bones and teeth  
d) used to make some types of glass  
e) rough

## TRUE OR FALSE

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*In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.*

- \_\_\_\_\_ 1. Diamonds are used only as jewelry.
- \_\_\_\_\_ 2. An abrasive is rough.
- \_\_\_\_\_ 3. Diamonds are good for grinding and cutting.
- \_\_\_\_\_ 4. Gypsum is an important part of glass.
- \_\_\_\_\_ 5. Every mineral is an ore.
- \_\_\_\_\_ 6. There is only one kind of ore.
- \_\_\_\_\_ 7. Metals come from ores.
- \_\_\_\_\_ 8. Diamond is harder than steel.
- \_\_\_\_\_ 9. Talc is used as an abrasive.
- \_\_\_\_\_ 10. Diamond is important in industry.

## WORD SCRAMBLE

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*Below are several scrambled words you have used in this Lesson. Unscramble the words and write your answers in the spaces.*

- 1. BRAVESAI \_\_\_\_\_
- 2. MADNOID \_\_\_\_\_
- 3. ROE \_\_\_\_\_
- 4. SGALS \_\_\_\_\_
- 5. UPSMYG \_\_\_\_\_

## REACHING OUT

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What steps should we take to keep our supplies of minerals from running out?

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