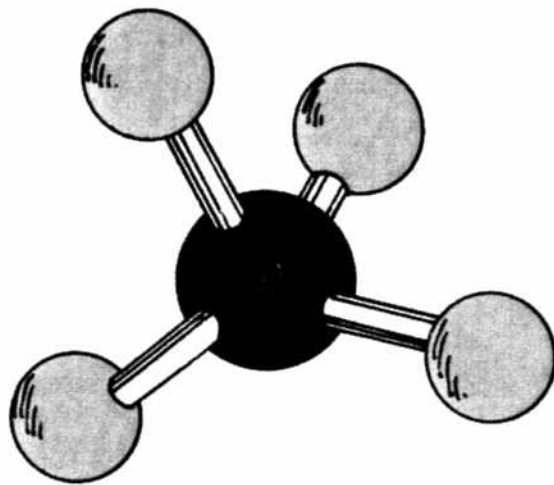


WHAT IS A MIXTURE?

1c



element: matter made of one kind of atom

compound: matter made of different kinds of atoms linked together

molecule: the tiniest part of a compound

mixture: two or more elements or compounds close together

states of matter: { solid
liquid
gas

Look around you. What do you see? A room filled with people, desks, windows? Everything you see around you is *matter*. Matter is anything that has weight and takes up space.

As you probably already know, matter is made up of tiny particles called *atoms*. Atoms are so tiny that they cannot be seen—not even with the most powerful microscope.

There are only 106 different kinds of atoms. Some matter has only one kind of atom. Matter that has only one kind of atom is called an *element*. Some examples of elements are gold, oxygen, iron, and hydrogen.

Most matter, however, is made up of two or more different kinds of atoms *linked together*. This kind of matter is called a *compound*. In a compound, the atoms are linked together to form *molecules*.

Water is a common compound. Some other compounds are salt, alcohol, and chalk.

Some elements and compounds are found “alone.” They are not mixed with anything else. The salt in a salt shaker, for example, is a compound. It is salt “alone.” No other substance is mixed in with it. If you add pepper, or *anything else* to the salt, it is no longer salt “alone.” It is part of a *mixture*.

A mixture, then, is made up of two or more different things *close together*. The parts may be different in any way. The parts can be elements or compounds.

Many things you know are mixtures. Tossed salads, salad dressing, coffee, tea—even soft drinks—are mixtures.

As you know, matter can be a *solid*, *liquid*, or *gas*. These are called the three *states of matter*. Mixtures may be of solids only, liquids only, or gases only. Or, mixtures may be made of different combinations of solids, liquids, and gases.

The air you breathe and the water you drink are mixtures. Air is a mixture of several gases. Drinking water has air and minerals mixed in with it.

ELEMENT, COMPOUND, OR MIXTURE?

Figures A through E show some common substances.

In the blank below each picture, write whether the arrow points to an *element*, *compound*, or *mixture*.

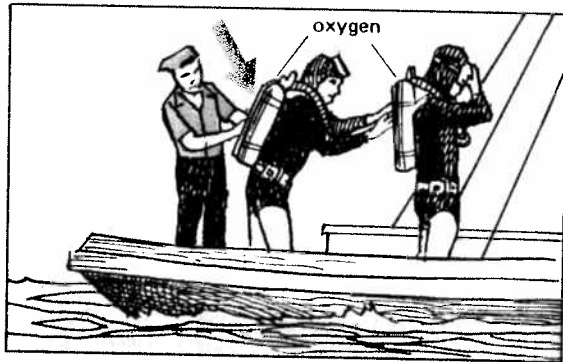


Figure A

1. _____



Figure B

2. _____

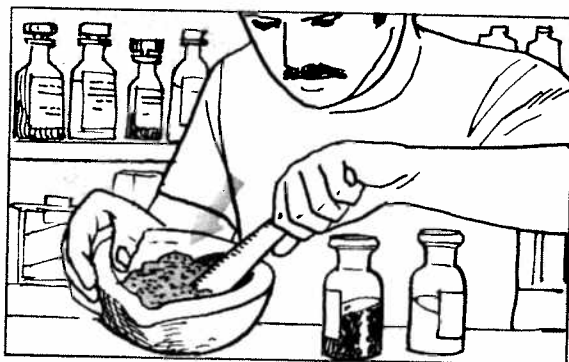


Figure C

3. _____

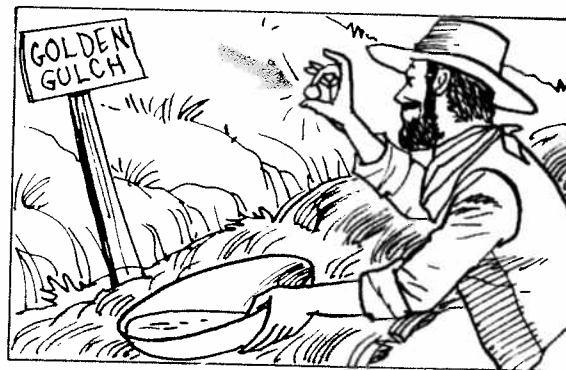


Figure D

4. _____

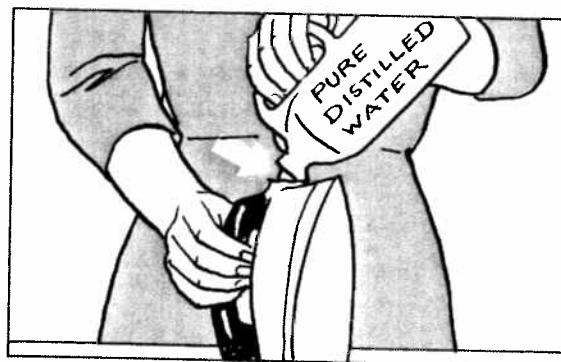


Figure E

5. _____

WHAT KIND OF MIXTURE?

Six of the possible kinds of mixtures are:

- a. a mixture of gases
- b. a mixture of liquids
- c. a mixture of solids
- d. a mixture of gases in a liquid
- e. a mixture of solids in a liquid
- f. a mixture of solids and gases

In Figures F through K, each arrow points to a mixture described in the list above. Write the letter that shows what kind of mixture it is below each picture.



Figure F

1. _____

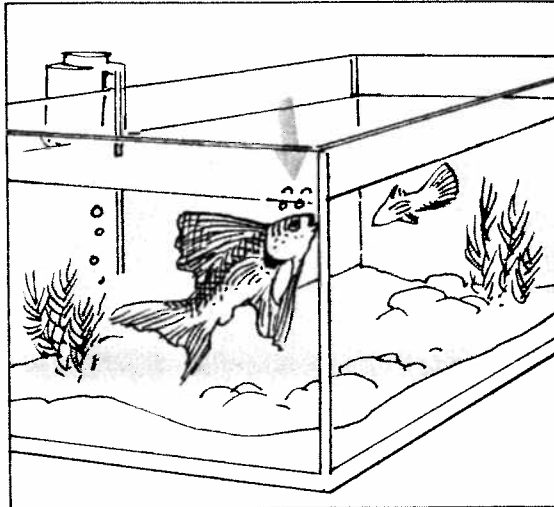


Figure G

2. _____



Figure H

3. _____



Figure I

4. _____



Figure J

5. _____

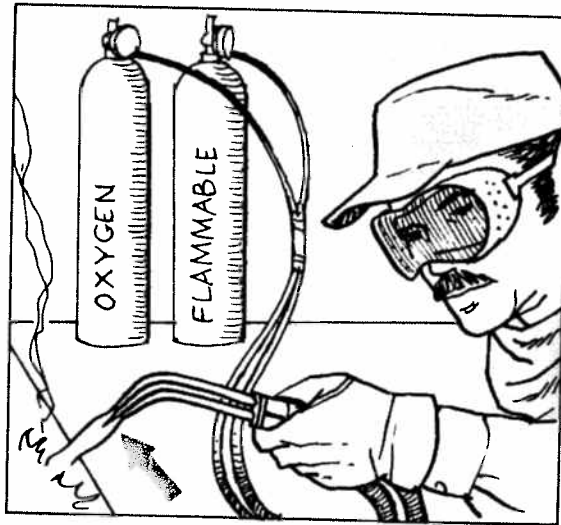


Figure K

6. _____

COMPLETING SENTENCES

Complete the sentences with the choices below. One of these may be used twice.

atoms
liquid
molecules
gases

states of matter
solid
minerals
compound

element
mixture
gas
air

1. The three states of matter are _____, _____, and _____ . (Use singular form.)
2. Every bit of matter is made up of tiny _____.
3. Matter that has only one kind of atom is called an _____.
4. Matter that has two or more different kinds of atoms linked together is called a _____.
5. Atoms link together to form _____.
6. Two or more different things close together is called a _____.
7. A mixture may contain any combination of the _____.
8. A mixture that is all around us is the _____.
9. Air is a mixture of _____.
10. Water has several _____ and _____ mixed in it.

MATCHING Match the two lists. Write the correct letter on the line next to each number.

- | | | |
|----------|--------------------|---|
| 1. _____ | element | a) has two or more different kinds of atoms linked together |
| 2. _____ | compound | b) mixed in with water |
| 3. _____ | mixture | c) a mixture of gases |
| 4. _____ | gases and minerals | d) different things close together |
| 5. _____ | air | e) has only one kind of atom |

TRUE OR FALSE Write T on the line next to the number if the sentence is true. Write F if the sentence is false.

1. _____ All matter is made up of atoms.
2. _____ A compound has only one kind of atom.
3. _____ An element has only one kind of atom.
4. _____ There are more compounds than elements.
5. _____ Mixtures are made of substances that are alike.
6. _____ Table salt is a mixture.
7. _____ The air is a mixture.
8. _____ Water is a mixture.
9. _____ Oxygen is a compound.
10. _____ We can see atoms.