1.8 and 1.9 - Classifying Matter

Answers:

1.8 - Models of Matter

Read p. 26-27 in your textbook and answer Q. 1-4, p. 27

1.9 - Classifying Matter

Read p. 28-30 in your textbook and fill in the blanks.

tens of thousands of different chemical substances make up the Earth. Some of these substances appear to be quite similar, while others are very different from one another.

Some substances like the clothes you wear are made of natural substances like cotton, wool

Some clothes are also made from substances that are synthetic — invented and produced by people. Examples: Nylon, polyester, Gore-tex

Pure Substances

All substances, whether natural or synthetic are made of the same building blocks - atoms or molecules.

A substance that only contains one of these building blocks is called a pure substance.

Pure substances that only consist of atoms are called elements.

The element carbon, for example, which makes up the soft, dark core of a pencil, consists of atoms of carbon. A **carbon atom** looks like ●.

Oxygen is an element that consists of pairs of atoms joined together as diatomic (two-atom) molecules. An **oxygen molecule** looks like ●●.

Pure substances that consist of molecules that are not diatomic are called compounds. Each of the atoms that make up the molecules of a compound are from different elements.

The air, for example, contains a compound called carbon dioxide. The molecules that make up this compound consist of one carbon atom linked to 2 oxygen atoms. A **carbon dioxide molecule** looks like ●●●.

What is a water vapour molecule made of? 2H, 1O

A **water molecule** looks like ●●●.

The number of possible chemical compounds is almost endless.

Mixtures

Metal ores are examples of mixtures. A mixture generally consists of 2 or more pure substances. Almost all the natural substances on in the earth are found on or in the earth are mixtures.

Mixtures can be any combination of solids, liquids, gases
A soft drink is a mixture of liquid water, solid sugar and CO_2

In a heterogeneous mixture, 2 or more substances can be seen or felt.
Some examples of heterogeneous mixtures are granola, pop

In a homogeneous mixture, the particles of the pure substances fix together so completely that the mixture looks + feels like one substance
Some examples of ~~hetero~~homogeneous mixtures are steel, tap water

In the homogeneous mixture of steel, the amount of carbon and iron may vary depending on the intended use of the steel.

Complete the concept map below. Answer questions 1-6 on p. 31.

CLASSIFICATION OF MATTER

Use the following terms to complete the concept map.

atoms (3) ✓✓✓ ✓elements ✓molecules (2) ✓pure substances
✓compounds ✓metals ✓particles ✓solutions
✓chemical changes ✓mixtures ✓physical changes