

MODULE: *Matter 1*

Post Test

1. (10 minutes)

Read the information below and then answer the questions.

Atoms and Bonding

Atoms are the smallest particle that can exist on their own. One type of atom can't be changed into another type through normal reactions and by physical changes.

Atoms of all the same type make substances called elements. Atoms of two or more different types can join together in fixed combinations; this makes compounds. The atoms in compounds can be grouped together either as molecules, or as giant structures in an array.

The properties of elements and compounds depend on how the atoms, molecules and giant structures are bonded together.

Making new and useful materials depends on knowing how to manipulate atoms.

Particle Pictures

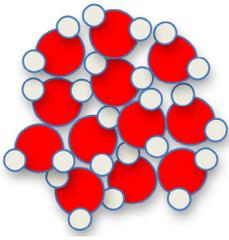
Particle pictures are a way of showing the structure of particles in a substance. They are not real pictures, because the particles are too small to see with our eyes – even by using a microscope.

A substance can be classified as either a **mixture** (with two or more different types of molecule in it) or a **pure substance** (with one type of molecule in it).

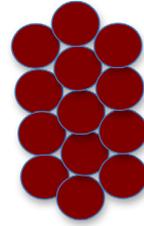
A pure substance can then be classified as a compound (with two or more different types of atom in it) or an element (with one type of atom in it).

A substance can also be classified as a **solid**, a **liquid** or a **gas**. Particle pictures give clues to this, as well.

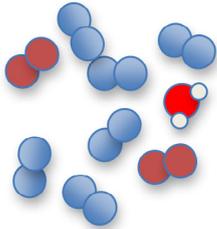
A



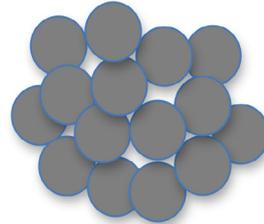
B



C



D



a. Explain how you would classify substance A. Give reasons for your answer

b. Explain how you would classify substance B. Give reasons for your answer

c. Explain how you would classify substance C. Give reasons for your answer

d. Explain how you would classify substance D. Give reasons for your answer

2. (5 minutes)

The outer part of an atom

Outside the nucleus are the electrons.

They are very tiny indeed, with almost no mass - much, much smaller than protons and neutrons.

They move so fast around the nucleus that they form one or more 'shells' around it.

Each electron has a negative charge.

An atom normally has the same number of electrons as protons.

So the electrons' negative charge balances the protons' positive charge. This means that an atom normally has no charge.

The electrons fill the outer part of the atom, and are the part other atoms react with.

- a. Describe the rest of the atom other than the nucleus.

- b. State what type of sub-atomic particle is found there, and describe what that particle is like.

- c. Describe the differences between the particles outside the nucleus and those inside it.

- d. Describe what the outer particles do.

