

### Thinking and working scientifically

1. In each list below, highlight the **one** chemical symbol that is written correctly.

- a. MG    mg    mG    Mg
- b. Be    BE    bE    be
- c. fE    FE    Fe    fe

2. Write the chemical symbol for each element in the table.

Name of element	chemical symbol
hydrogen	
helium	
lithium	
beryllium	
boron	
carbon	
nitrogen	
oxygen	
fluorine	
neon	

3. Write the names of the elements represented by the chemical symbols in the table.

Chemical symbol	Name of element
Na	
Mg	
Al	
Si	
P	
S	
Cl	
Ar	
K	
Ca	

4. Write the chemical symbols of each of the elements below. Then read the sentence.

rhennium, vanadium, iodine, silicon, oxygen, nitrogen, iodine, sulfur, neon, cerium, sulfur,  
sulfur, argon, yttrium

### Extension

Write down:

- The Japanese chemical symbol for phosphorus.
- The chemical symbol used by Chinese scientists for chlorine.
- The chemical symbol used by Latvian scientists for beryllium.

1. Write **T** next to the statements that are true. Write **F** next to the statements that are false.

Then write corrected versions of the **three** false statements.

- a. An atom is the smallest part of an element that can exist.
- b. In science, a model is an idea that explains observations only.
- c. An element is a substance that is made from one type of atom.
- d. A single copper atom has the same properties as a block of copper.
- e. Every element has its own type of atom.
- f. Oxygen atoms are different from the atoms of every other element.
- g. The atoms of platinum and silver are identical.

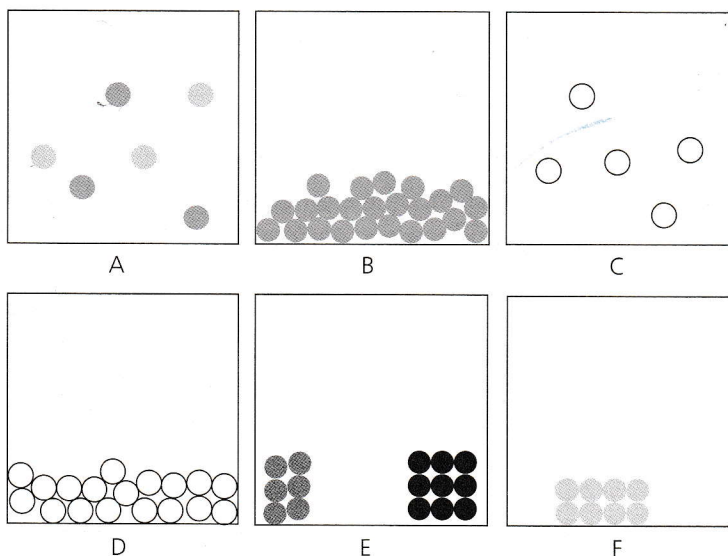
**Corrected versions of false statements:**

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.....

.....

2. We can imagine atoms as spheres. In the diagrams, each circle represents one atom. Atoms of different elements have different shading.



- a. Give the letters of **four** boxes that shows atoms of one element only. ....
- b. Give the letters of **two** boxes that each show atoms of two elements. ....
- c. Give the letters of **two** boxes that show atoms of the same element. ....
- d. Give the letters of **two** boxes that each show atoms of one of the elements in box A.  
.....
- e. Give the letters of **two** boxes that show atoms of the same element in different states.  
.....

**Extension**

If you could place one hundred million atoms side by side, they would stretch 1 cm. Calculate the number of atoms that would stretch 1 km.

*Hint: There are 100 cm in 1 m, and 1000 m in 1 km.*

1. Give the names of the compounds made up of atoms of the elements below.

- a. magnesium and oxygen .....
- b. iron and sulfur .....
- c. aluminium and chlorine .....
- d. iron and bromine .....
- e. potassium and iodine .....
- f. sodium and nitrogen .....

2. The compounds below are each made up of atoms of three elements. For each compound, write the names of the three elements.

- a. calcium carbonate
- b. iron sulfate
- c. sodium nitrate
- d. potassium phosphate

3. Give the names of the compounds made up of atoms of the elements below.

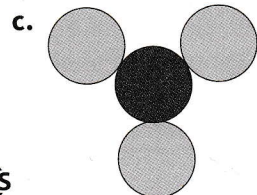
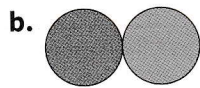
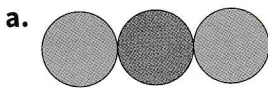
- a. sodium, carbon, and oxygen .....
- b. magnesium, nitrogen, and oxygen .....
- c. copper, sulfur, and oxygen .....

4. Complete the table.

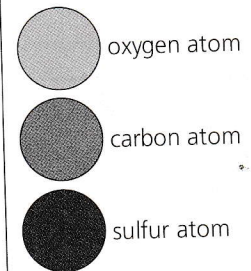
Molecule of compound made up of...	Name of compound
1 atom of carbon and 2 atoms of oxygen	_____
_____	carbon monoxide
1 atom of nitrogen and 2 atoms of oxygen	_____
_____	sulfur trioxide
1 atom of sulfur and 2 atoms of oxygen	_____

**Extension**

**TWS** Write the names of the compounds shown in the molecule diagrams below.



Key:



**TWS**