

TOPIC 1 Substances and Reactions Success Criteria and Summary Notes

1. **State** that everything is made up of building blocks called **ELEMENTS**. There are around **100** elements

2. **State** that **ELEMENTS** have symbols

e.g The element Carbon has the symbol C

3. Each element contains one type of *ATOM*

4. Use a Periodic Table to **identify** the symbols for elements

[illegible]

-  **Group 1 – Alkali metals**
A group of very reactive metals
-  **Group 7 – Halogens**
A group of very reactive non-metals
-  **Group 0 – Noble gases**
A group of very unreactive non-metals

11. State that the name given to the following groups of the Periodic Table
Group 1 = ALKALI METALS
Group 7 = HALOGENS
Group 0 = NOBLE GASES
12. State that the metals between Group 2 and Group 3 are called **TRANSITION METALS**
13. Give an example of a **MIXTURE** and define the word **MIXTURE**

Examples of mixtures

Air is a mixture of different gases – air is mainly made up of

Nitrogen-78%

Oxygen 21%

Argon about 0.9%

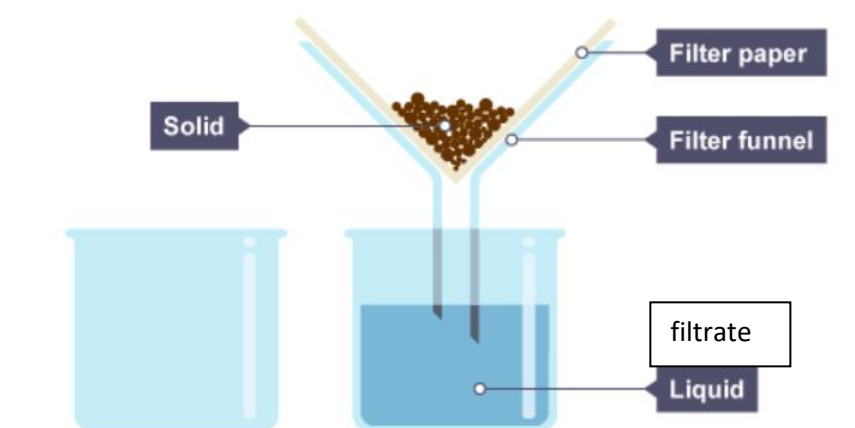
Carbon dioxide 0.04%

Others 0.06%

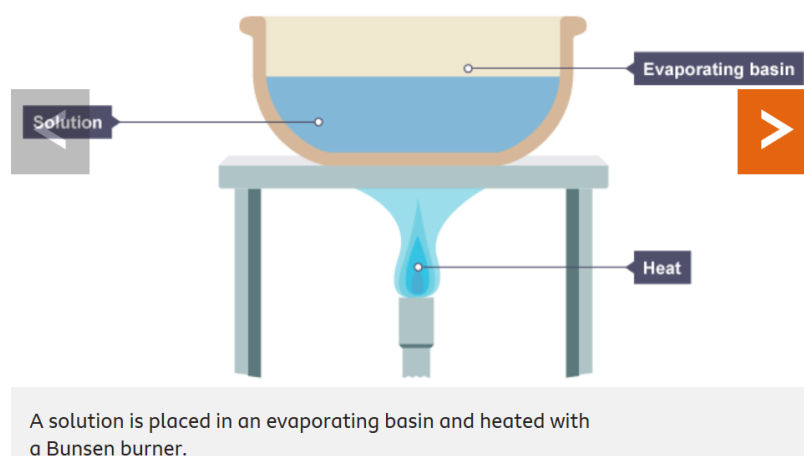
14. Separate a MIXTURE

It is possible to separate mixture using techniques

1. Filtration - separates insoluble solids from liquids e.g. sand from water



2. Evaporation - separates soluble solids from solutions e.g. salt from salt water



15. Make a compound called iron (II) sulfide

16. Compare the properties of the compound to a mixture with the same elements present

Property	Properties of elements present	Property of the compound
magnetism	Iron is magnetic Sulfur is not magnetic	Non-magnetic
appearance	Iron - dark brown Sulfur - bright yellow	Dark brown

17. State difference between a mixture and a compound

In a compound the 2 or more elements are chemically joined

In a mixture substances are together but are not chemically joined

It is relatively easy to separate the substances in a mixture.

Separating the elements in a compound is not easy.

18. State the "ide" rule

Compounds which end in the 2 letters "ide" means the compound contains 2 elements

18. Name compounds that contain 2 elements

e.g. Sodium chloride contains the element sodium and the element chlorine

19. State what mono, di, tri and tetra prefixes mean

Mono means 1

Di means 2

Tri means 3

Tetra means 4

Penta means 5

20. Write formula from compound names which use these prefixes and vice versa

Carbon monoxide - CO

Sulfur dioxide - SO_2

Phosphorus trichloride - PCl_3

Carbon tetrachloride - CCl_4

Iodine pentafluoride IF_5

21. State the "**ate/ite**" rule

The compound contains 3 elements one of which is oxygen

22. Name the elements present when given a compound name that ends in "**ate/ite**"

e.g. copper sulfate - contains copper sulfur and oxygen

sodium nitrite - contains sodium nitrogen and oxygen

23. State the exception to the "**ide**" rule

The exception to the "ide" rule is sodium hydroxide

This compound contains sodium, hydrogen and oxygen

24. Write word equations for chemical reactions from a description

Example

When zinc is added to hydrochloric acid, hydrogen and zinc chloride are produced

Word equation:

Zinc + Hydrochloric acid $\rightarrow$ Zinc chloride + hydrogen