



3055 BA SANGAM COLLEGE

PH: 6674003/9264117 E-mail: basangam@connect.com.fj



WORKSHEET 10

School: Ba Sangam College

Year/level: 10

Subject: Basic Science

Name: _____

Strand 2	Matter
Sub Strand 2.1	Investigating Matter
Content Learning Outcome	Investigate the structure of an atom and explain the properties of common elements in relation to their position on the periodic table.

Lesson Notes

Chemical properties are those that alter the chemical nature of the substance and enable the product to be recognized as a separate substance.

Those elements with the same number of electrons in their outer shell have similar properties.

Groups of elements with similar properties are called **blocks**.

Reactivity – is a measure of how actively a substance or chemical reacts with another substance or chemical.

- The **substances that react** are called **metals**.
- The most reactive metals are the alkali metals, while the noble gases don't react at all.

Physical and chemical properties down a group.

1. Down Group 1 (Alkali Metals) –*lithium, sodium and potassium.*

Physical properties– are metals, so light they float in water, are silvery and shiny when freshly cut (but quickly tarnish) and have low melting and boiling points compared with other metals.

Chemical properties–lithium is the **least reactive** because it reacts the most slowly.

Potassium is the **most reactive** of the three.

Why they have similar properties? Because in the elements of Group 1, all atoms have 1 electron in their outer shell.

2. Down Group 7 (Halogens) –*chlorine, bromine and iodine.*

Physical properties–are non-metals, are coloured (chlorine–green gas, bromine- red liquid, iodine – black solid), are poisonous

Chemical properties – chlorine is the most reactive, it reacts most easily with iron. Iodine is the least reactive of the three.

Why they have similar properties? Because the atoms have 7 electron in their outer shell.

3. Down Group 8 (Noble gases) –*helium, neon and argon*

Physical properties–are non- metals, are gases (they are all found in air), are colourless.

Chemical properties–unreactive

Why they have similar properties? Because the atoms all have a full outer shell of electrons, that is why they are unreactive.

Exercise

1. The diagram shown below is an outline of the periodic table.

I	II											III	IV	V	VI	VII	VIII

i. The elements that are located in the area that is shaded in the table are known as Group 1 elements. What is the other name given to this group?

_____ (1 mark)

ii. State why elements in this group have similar chemical properties?

_____ (1 mark)

iii. The elements in Group VIII are also known as Noble Gases. State whether these elements are reactive or unreactive. Give an explanation.

_____ (2 marks)

2. What is the alternative name given to group 7 elements?

_____ (1 mark)

TOTAL:

