



# SHS LEARNING ACTIVITY

CHEM1-01-01

Name: \_\_\_\_\_ Score/Mark: \_\_\_\_\_

Grade and Section: \_\_\_\_\_ Date: \_\_\_\_\_

Strand:  STEM  ABM  HUMSS  ICT (*TVL Track*)Type of Activity:  Concept Notes  Skills: Exercise/Drill  Illustration Laboratory Report  Essay/Task Report  Other: \_\_\_\_\_Activity Title: 01-01. Plan for Chemistry 1 - Semester 1 v09

Learning Target: To identify the topics covered in Chemistry 1 - Semester 1

Authors/References: Victor Sojo/DepEd-SHS General Chemistry 1 and 2

Topic	Material
<b>1. Introduction to Chemistry</b>	The <b>substances</b> we touch, see and eat, are made of <b>matter</b> . Chemistry studies substances and how and why they transform into different substances ( <b>react</b> ).
<b>2. Matter and particles</b>	1. Matter is made of <b>atoms</b> , which are made of smaller particles called <b>protons</b> , <b>neutrons</b> , and <b>electrons</b> . 2. Identical atoms are atoms of the same <b>element</b> . 3. Elements can combine to form <b>compounds</b> . For example, water is a <b>compound</b> . It is made of atoms of two different <b>elements</b> : hydrogen and oxygen.
<b>3. Electrons, orbitals and the Periodic Table</b>	1. <b>Quantum Theory</b> describes how electrons distribute in <b>orbitals</b> around the nucleus made of protons and neutrons. 2. Elements can be ordered according to their properties.
<b>4. Bonds</b>	1. Atoms can <b>bond</b> (attach) to each other in many ways. 2. The ways in which atoms are bonded to each other in salt, sugar and iron are very different.
<b>5. Naming chemical compounds</b>	Because there are so many chemical compounds, chemists have created systematic (organized) ways of naming them. This is called <b>chemical nomenclature</b> .
<b>6. Reactions and Stoichiometry</b>	1. The processes by which substances change into different substances are called <b>chemical reactions</b> . 2. Reactions often (but not always) involve <b>changes</b> in <b>color</b> , <b>temperature</b> , or <b>appearance</b> (looks). 3. It is possible to express these reactions as mathematical relations (formulae), called <b>chemical equations</b> . 4. These equations let us calculate the amounts of the substances that react (the <b>reagents</b> ) and predict the amounts of the substances formed (the <b>products</b> ). 5. Reactions can happen in gases (such as air), in liquids (like water) and sometimes even in solids (like metals).
<b>7. Aqueous solutions</b>	1. <b>Water</b> is a very special molecule, with a negative end and two positive ends. This makes it a <b>polar solvent</b> (it has "poles", like a magnet or a planet). 2. Water <b>dissolves</b> many substances, such as salt and sugar, but not many others, like oil or gold.

## Questions

1. Give an example in which you think a **chemical reaction** has happened; for example, when an iron screw turns orange (rusts or "**oxidizes**") over time.
2. We saw the **elements** hydrogen and oxygen above. Can you name any others?

