**EMERALD ROYAL INT’L SCHOOL**

**LESSON PLAN/NOTE FOR WEEK 2 ENDING: 12TH MAY, 2023**

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| **Term** | 3rd |
| **Week** | 2 |
| **Date** | 8/05/2023 |
| **Class** | SSS 1 |
| **Subject** | Physics |
| **Topic** | Particle nature of matter |
| **Sub-topic** | Structure of matter |
| **Period** | 1 and 2 |
| **Time** | 11:50-1:00 |
| **Duration** | 80minutes |
| **Number in class** | 8 |
| **Average age** | 13years |
| **Sex** | Mixed |
| **Specific objectives** | By the end of the lesson, the students should be able to:   1. Describe structure of matter 2. State the constituent of the atom |
| **Rationale** | To enable the students understand the particle nature of matter |
| **Previous knowledge** | Students should have been taught the atomic structure of matter |
| **Instructional aid** | One guide sheet for each student, Science notebook and a science textbook. |
| **Reference** | * M.W. Anyakoha. New school physics for secondary schools. Africana first publishers PLC. page 89-94 * P.N. Okeke. Macmillan Senior Secondary Physics. Pearson. Page58-61 |

**LESSON DEVELOPMENT**

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| **STEPS** | **TEACHER’S ACTIVITIES** | **STUDENTS’ ACTIVITIES** | **LEARNING POINTS** |
| **Introduction** | The teacher introduces the kinetic molecular theory of matter which states that matter is composed of molecules which are in incessant motion. | The students use the kinetic molecular theory of matter to explain the state of matter. | To give the students a rudimentary understanding of particle nature of matter. |
| **Step I** | *Structure of matter*  Matter is what we call anything that has mass and occupies space. Matter exists in three different states, which are solid, liquid and gas. A given piece of a substance, say a piece of yam, can be cut into smaller and smaller bits, until eventually a smallest piece of that substance would be obtained which could not be further subdivided. This smallest, indivisible, piece is called the molecule. | The students begin to develop an understanding of what matter is. Understanding the meaning of an atom, element and molecules. | To ensure proper understanding of the lesson. |
| **Step II** | *Constituent of the atom*  The atom is made of two parts. The nucleus and the electron.  The nucleus is the heavy portion of the atom and is located at its Centre. It consists of two parts, the protons and the neutrons. The protons carry a positive charge, the neutron carry no charge.  The second part of the atom is the electron. The electrons are very light, and are negatively charged. The electrons circle in orbits around the heavy nucleus and are held in place due to the electrostatic attraction between them and the protons or the nucleus.  In a neutron atom, the total charges due to the electrons must balance the total charges due to the protons. | The students listen attentively to the teacher’s explanation. | To ensure that all the students are carried along. |
| **Summary** | The **atom** consists of central massive nucleus surrounded by light electrons moving in orbits around the nucleus. The nucleus itself consists of protons and neutrons. Protons are positively charged, electrons are negatively charged and neutrons carry no charge.  A **molecule** is the smallest particle of a substance which can have a separate existence and still retain the properties of that substance.  The size of a molecule is about 10-9-10-10.  The kinetic energy of the molecules constituting matter increases with temperature. | The students listen attentively to the teacher’s explanation. | For reference purpose. |
| **Evaluation** | The teacher evaluates the students by giving the students the following class work.  Define the following terms:   1. Atom 2. Molecules 3. Ions | The students answer the questions in their science notebook. | To ascertain the students level of understanding of the lesson. |
| **Conclusion** | The teacher makes correction of the classwork. | The students copy the correction in their exercise books. | For reference purpose |
| **Assignment**  **(Homework)** | The teacher gives the students the following assignment.  Using the kinetic theory of matter, explain   1. Solids 2. Liquids 3. gases | The students copy the questions into their exercise books and take home for solving. | To encourage critical thinking of the students at home. |



12/7/2023

Principal Head Instuctor